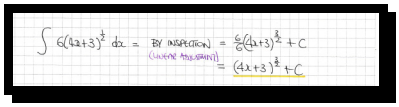
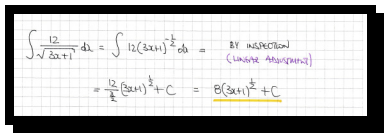
INTEGRATION MIX

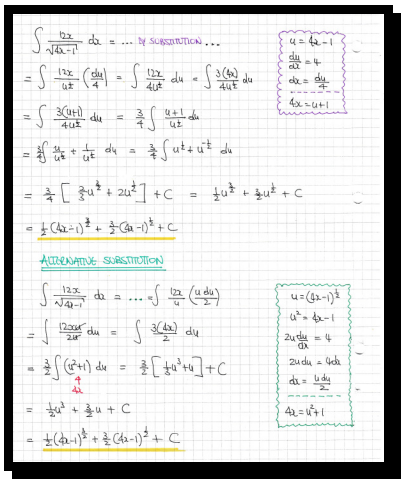
1. $\displaystyle\int 6(4x+3)^{\frac{1}{2}}\,dx=(4x+3)^{\frac{3}{2}}+C$



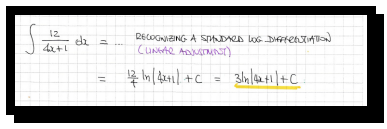
2. $\displaystyle\int \frac{12}{\sqrt{3x+1}}\,dx=8(3x+1)^{\frac{1}{2}}+C$



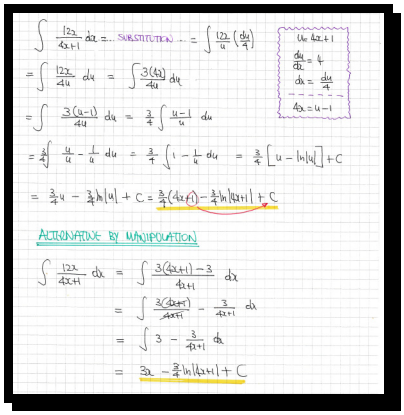
3. $\displaystyle\int \frac{12x}{\sqrt{4x-1}}\,dx=\frac{1}{2}(4x-1)^{\frac{3}{2}}+\frac{3}{2}(4x-1)^{\frac{1}{2}}+C$



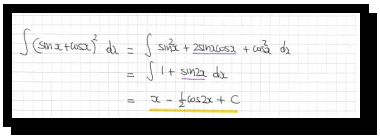
4. $\displaystyle\int \frac{12}{4x+1}\,dx=3\ln\left|4x+1\right|+C$



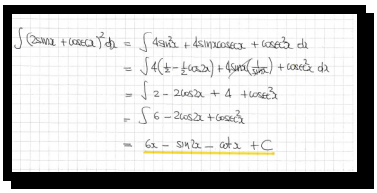
5. $\displaystyle\int \frac{12x}{4x+1}\,dx = 3x - \frac{3}{4}\ln|4x+1| + C$



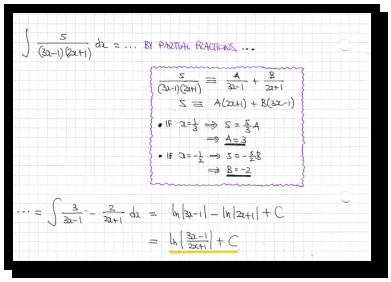
6. $\displaystyle\int (\sin x + \cos x)^2\,dx = x - \frac{1}{2}\cos 2x + C$



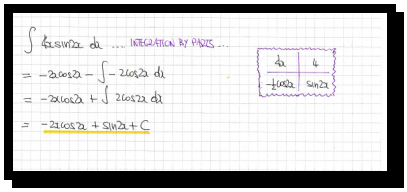
7. $\displaystyle\int (2\sin x + \operatorname{cosec} x)^2\,dx = 6x - \sin 2x - \cot x + C$



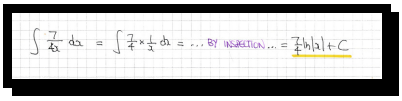
8. $\displaystyle\int \frac{5}{(3x-1)(2x+1)}\,dx = \ln\left|\frac{3x-1}{2x+1}\right| + C$



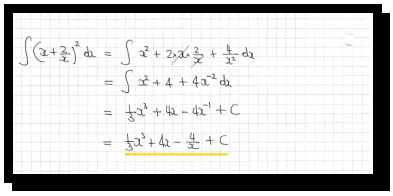
9. $\displaystyle\int 4x\sin 2x\,dx = -2x\cos 2x + \sin 2x + C$



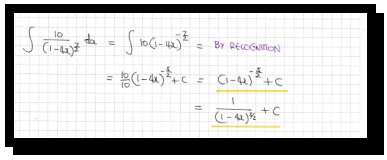
10. $\displaystyle\int \frac{7}{4x}\,dx = \frac{7}{4}\ln|x| + C$



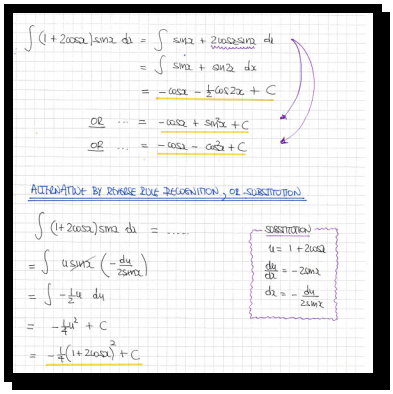
11. $\displaystyle\int \left(x+\frac{2}{x}\right)^2 dx = \frac{1}{3}x^3 + 4x - \frac{4}{x} + C$



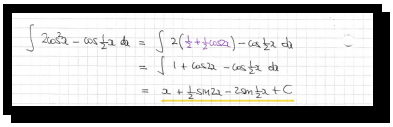
12. $\displaystyle\int \frac{10}{(1-4x)^{\frac{7}{2}}}\,dx = \frac{1}{(1-4x)^{\frac{5}{2}}} + C$



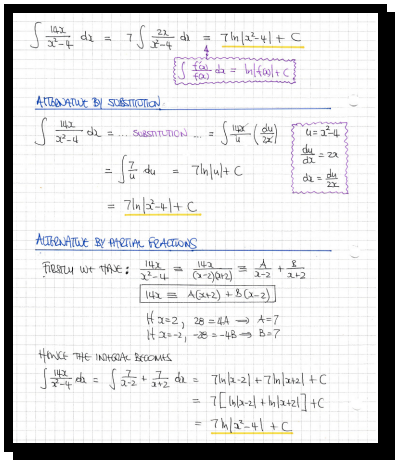
13. $\displaystyle\int (1+2\cos x)\sin x\,dx = \begin{bmatrix} -\cos x - \frac{1}{2}\cos 2x + C \\ -\cos x + \sin^2 x + C \\ -\cos x - \cos^2 x + C \\ -\frac{1}{4}(1+2\cos x)^2 + C \end{bmatrix}$



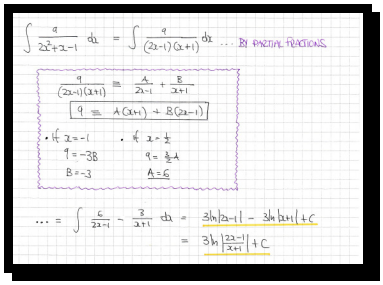
14. $\displaystyle\int 2\cos^2 x - \cos\left(\frac{1}{2}x\right)dx = x + \frac{1}{2}\sin 2x - 2\sin\left(\frac{1}{2}x\right) + C$



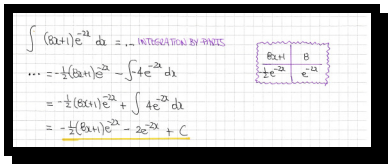
15. $\displaystyle\int \frac{14x}{x^2-4}\,dx = 7\ln\left|x^2-4\right|+C$



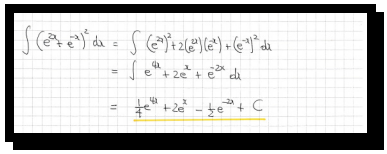
16. $\displaystyle\int \frac{9}{2x^2+x-1}\,dx = 3\ln\left|\frac{2x-1}{x+1}\right|+C$



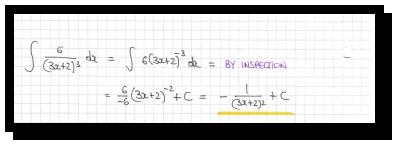
17. $\displaystyle\int (8x+1)\mathrm{e}^{-2x}\,dx = -\frac{1}{2}(8x+1)\mathrm{e}^{-2x}-2\mathrm{e}^{-2x}+C$



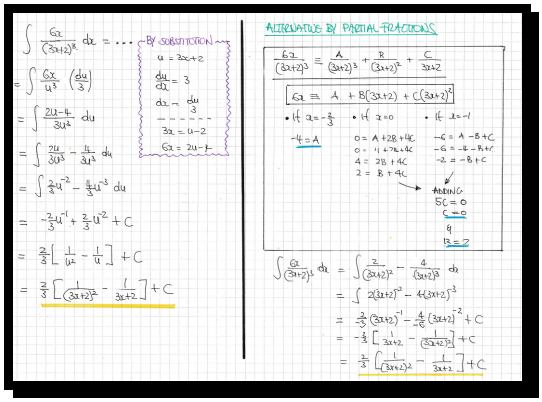
18. $\displaystyle\int\left(\mathrm{e}^{2x}+\mathrm{e}^{-x}\right)^2\,dx=\frac{1}{4}\mathrm{e}^{4x}+2\mathrm{e}^{x}-\frac{1}{2}\mathrm{e}^{-2x}+C$



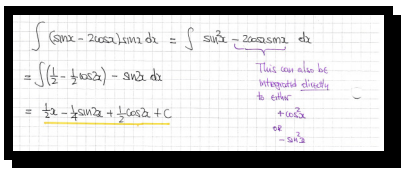
19. $\displaystyle\int\frac{6}{(3x+2)^3}\,dx=-\frac{1}{(3x+2)^2}+C$



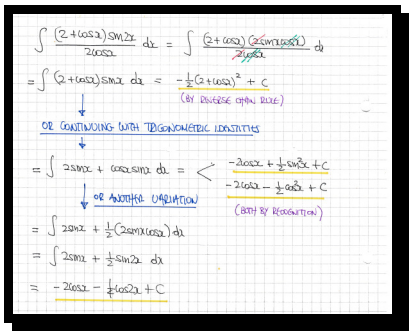
20. $\displaystyle\int\frac{6x}{(3x+2)^3}\,dx=\frac{2}{3}\left[\frac{1}{(3x+2)^2}-\frac{1}{3x+2}\right]+C$



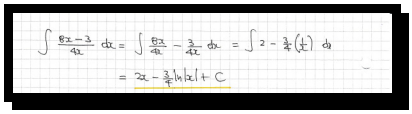
21. $\displaystyle\int (\sin x - 2\cos x)\sin x \, dx = \begin{bmatrix} \frac{1}{2}x - \frac{1}{4}\sin 2x + \frac{1}{2}\cos 2x + C \\ \frac{1}{2}x - \frac{1}{4}\sin 2x + \cos^2 x + C \\ \frac{1}{2}x - \frac{1}{4}\sin 2x - \sin^2 x + C \end{bmatrix}$



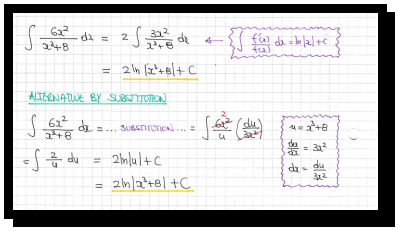
22. $\displaystyle\int \frac{(2+\cos x)\sin 2x}{2\cos x}\, dx = \begin{bmatrix} -\frac{1}{2}(2+\cos x)^2 + C \\ -2\cos x + \frac{1}{2}\sin^2 x + C \\ -2\cos x - \frac{1}{2}\cos^2 x + C \\ -2\cos x - \frac{1}{4}\cos 2x + C \end{bmatrix}$



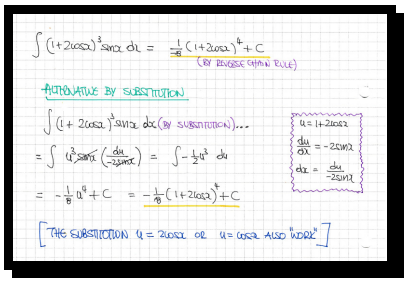
23. $\displaystyle\int \frac{8x-3}{4x}\, dx = 2x - \frac{3}{4}\ln|x| + C$



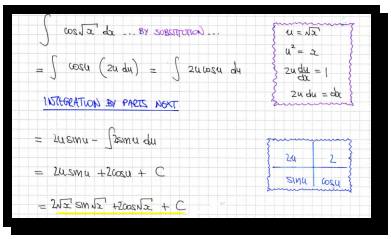
24. $\displaystyle\int \frac{6x^2}{x^3+8}\,dx = 2\ln\left|x^3+8\right|+C$



25. $\displaystyle\int (1+2\cos x)^3 \sin x\,dx = -\frac{1}{8}(1+2\cos x)^4 + C$



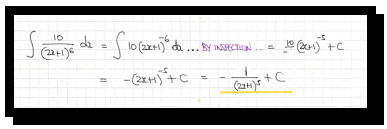
26. $\displaystyle\int \cos\sqrt{x}\,dx = 2\sqrt{x}\sin\sqrt{x} + 2\cos\sqrt{x} + C$



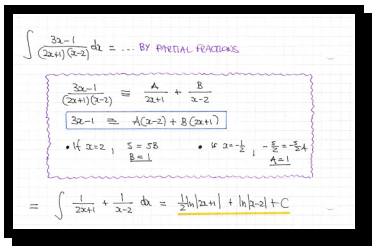
27. $\displaystyle\int \frac{3}{2x-1}\,dx = \frac{3}{2}\ln\left|2x-1\right|+C$



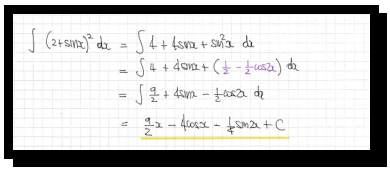
28. $\displaystyle\int \frac{10}{(2x+1)^6}\,dx = -\frac{1}{(2x+1)^5}+C$



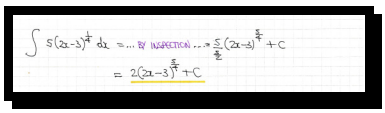
29. $\displaystyle\int \frac{3x-1}{(2x+1)(x-2)}\,dx = \frac{1}{2}\ln|2x+1|+\ln|x-2|+C$



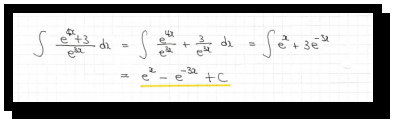
30. $\displaystyle\int (2+\sin x)^2\,dx = \frac{9}{2}x-4\cos x-\frac{1}{4}\sin 2x+C$



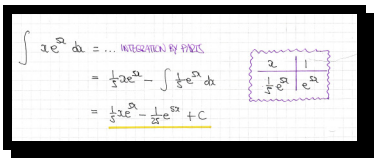
31. $\displaystyle\int 5(2x-3)^{\frac{1}{4}}\,dx = 2(2x-3)^{\frac{5}{4}}+C$



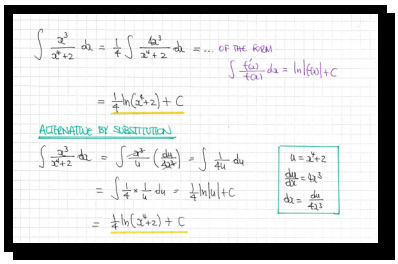
32. $\displaystyle\int \frac{\mathrm{e}^{4x}+3}{\mathrm{e}^{3x}}\,dx=\mathrm{e}^{x}-\mathrm{e}^{-3x}+C$



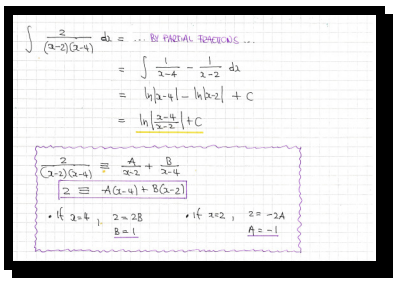
33. $\displaystyle\int x\mathrm{e}^{5x}\,dx=\frac{1}{5}x\mathrm{e}^{5x}-\frac{1}{25}\mathrm{e}^{5x}+C$



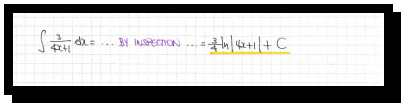
34. $\displaystyle\int \frac{x^3}{x^4+2}\,dx=\frac{1}{4}\ln\left(x^4+2\right)+C$



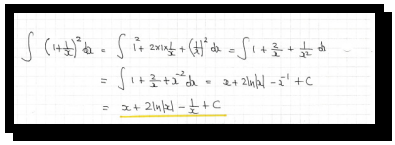
35. $\displaystyle\int \frac{2}{(x-2)(x-4)}\,dx=\ln\left|\frac{x-4}{x-2}\right|+C$



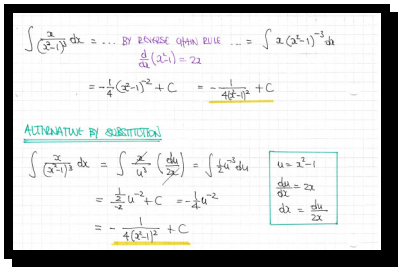
36. $\displaystyle\int \frac{3}{4x+1}\,dx = \frac{3}{4}\ln\left|4x+1\right| + C$



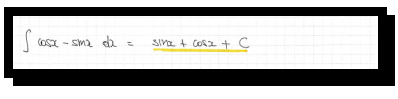
37. $\displaystyle\int \left(1+\frac{1}{x}\right)^2 dx = x + 2\ln\left|x\right| - \frac{1}{x} + C$



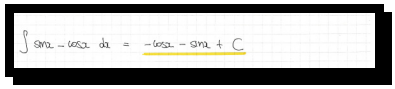
38. $\displaystyle\int \frac{x}{\left(x^2-1\right)^3}\,dx = -\frac{1}{4\left(x^2-1\right)^2} + C$



39. $\displaystyle\int \cos x - \sin x\,dx = \sin x + \cos x + C$



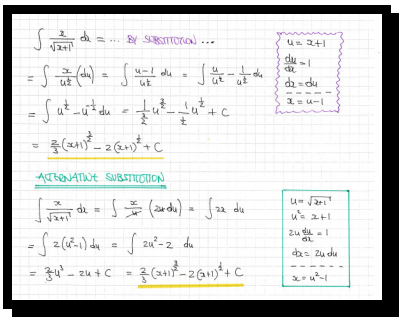
40. $\displaystyle\int \sin x - \cos x \, dx = -\cos x - \sin x + C$



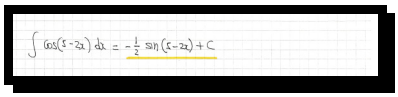
41. $\displaystyle\int \sin(4x+3) \, dx = -\frac{1}{4}\cos(4x+3) + C$



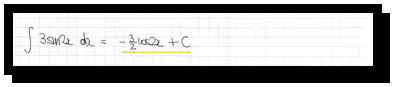
42. $\displaystyle\int \frac{x}{\sqrt{x+1}} \, dx = \frac{2}{3}(x+1)^{\frac{3}{2}} - 2(x+1)^{\frac{1}{2}} + C$



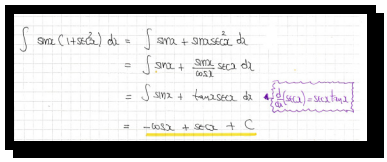
43. $\displaystyle\int \cos(5-2x) \, dx = -\frac{1}{2}\sin(5-2x) + C$



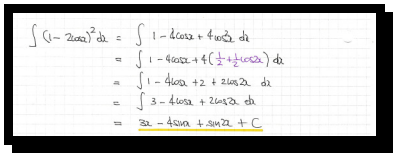
44. $\displaystyle\int 3\sin 2x\ dx = -\frac{3}{2}\cos 2x + C$



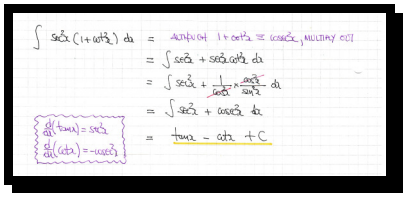
45. $\displaystyle\int \left(1+\sec^2 x\right)\sin x\ dx = -\cos x + \sec x + C$



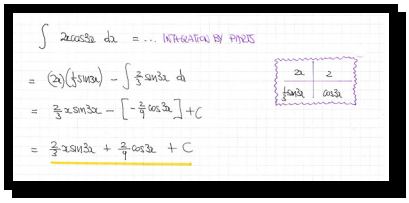
46. $\displaystyle\int \left(1-2\cos x\right)^2\ dx = 3x - 4\sin x + \sin 2x + C$



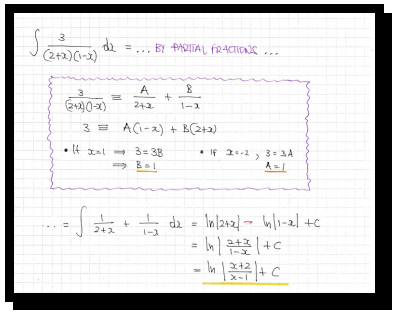
47. $\displaystyle\int \left(1+\cot^2 x\right)\sec^2 x\ dx = \tan x - \cot x + C$



48. $\displaystyle\int 2x\cos 3x\ dx = \frac{2}{3}x\sin 3x + \frac{2}{9}\cos 3x + C$



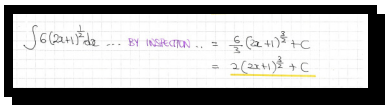
49. $\displaystyle\int \frac{3}{(2+x)(1-x)}\ dx = \ln\left|\frac{x+2}{x-1}\right| + C$



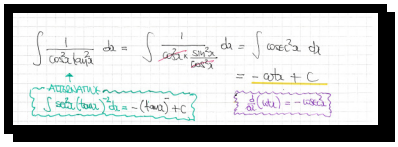
50. $\displaystyle\int 10(3x+1)^4\ dx = \frac{2}{3}(3x+1)^5 + C$



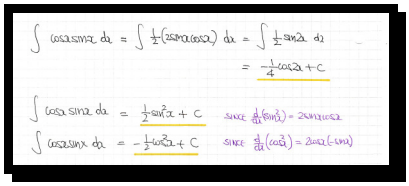
51. $\displaystyle\int 6(2x+1)^{\frac{1}{2}}\ dx = 2(2x+1)^{\frac{3}{2}} + C$



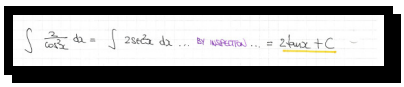
52. $\displaystyle\int \frac{1}{\cos^2 x \tan^2 x}\,dx = -\cot x + C$



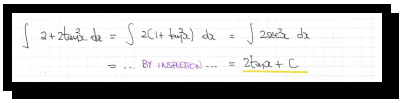
53. $\displaystyle\int \cos x \sin x\,dx = \begin{bmatrix} -\frac{1}{4}\cos 2x + C \\ -\frac{1}{2}\cos^2 x + C \\ \frac{1}{2}\sin^2 x + C \end{bmatrix}$



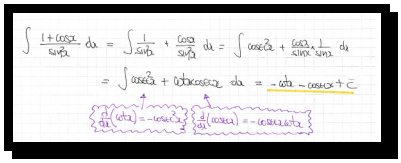
54. $\displaystyle\int \frac{2}{\cos^2 x}\,dx = 2\tan x + C$



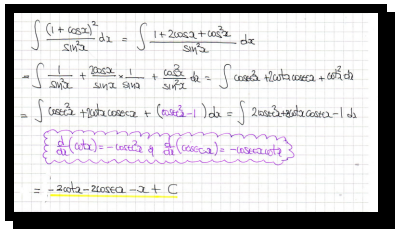
55. $\displaystyle\int 2 + 2\tan^2 x\,dx = 2\tan x + C$



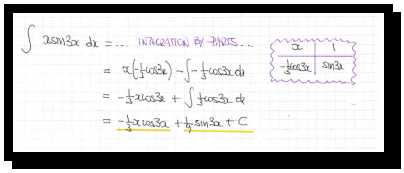
56. $\displaystyle\int \frac{1+\cos x}{\sin^2 x}\,dx = -\cot x - \operatorname{cosec} x + C$



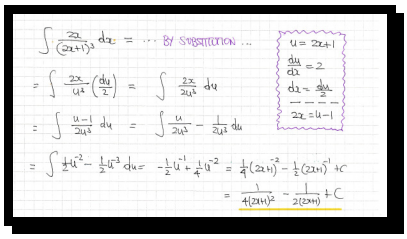
57. $\displaystyle\int \frac{(1+\cos x)^2}{\sin^2 x}\,dx = -x - 2\cot x - 2\operatorname{cosec} x + C$



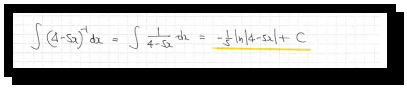
58. $\displaystyle\int x\sin 3x\,dx = -\frac{1}{3}x\cos 3x + \frac{1}{9}\sin 3x + C$



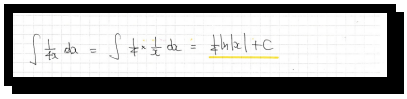
59. $\displaystyle\int \frac{2x}{(2x+1)^3}\,dx = \frac{1}{4(2x+1)^2} - \frac{1}{2(2x+1)} + C$



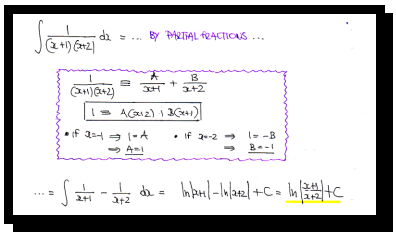
60. $\displaystyle\int (4-5x)^{-1}\,dx = -\frac{1}{5}\ln|4-5x| + C$



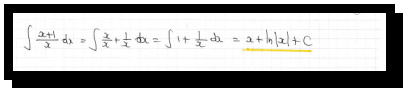
61. $\displaystyle\int \frac{1}{4x}\,dx = \frac{1}{4}\ln|x| + C$



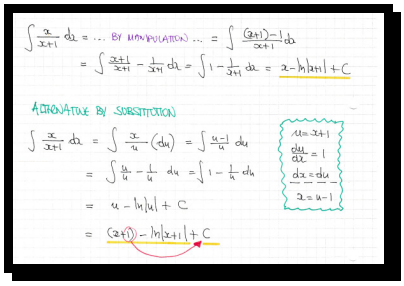
62. $\displaystyle\int \frac{1}{(x+1)(x+2)}\,dx = \ln\left|\frac{x+1}{x+2}\right| + C$



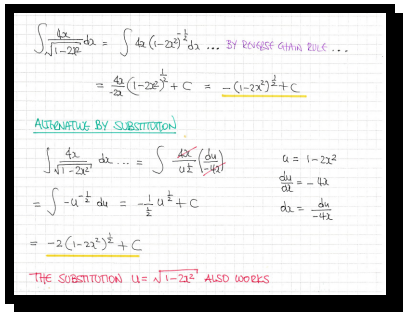
63. $\displaystyle\int \frac{x+1}{x}\,dx = x + \ln|x| + C$



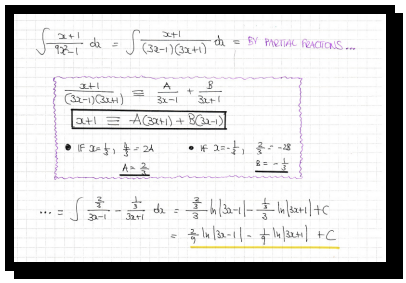
64. $\displaystyle\int \frac{x}{x+1}\,dx = x - \ln|x+1| + C$



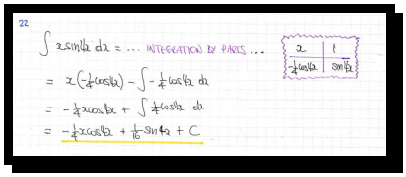
65. $\displaystyle\int \frac{4x}{\sqrt{1-2x^2}}\,dx = -2\sqrt{1-2x^2} + C$



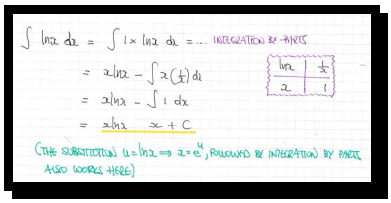
66. $\displaystyle\int \frac{x+1}{9x^2-1}\,dx = \frac{2}{9}\ln|3x-1| - \frac{1}{9}\ln|3x+1| + C$



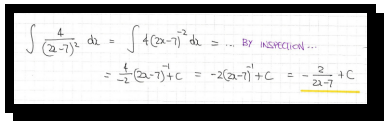
67. $\displaystyle\int x\sin 4x\,dx=\frac{1}{16}\sin 4x-\frac{1}{4}x\cos 4x+C$



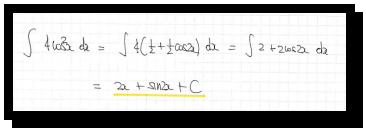
68. $\displaystyle\int \ln x\,dx=x\ln x-x+C$



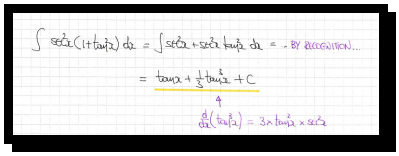
69. $\displaystyle\int \frac{4}{(2x-7)^2}\,dx=-\frac{2}{2x-7}+C$



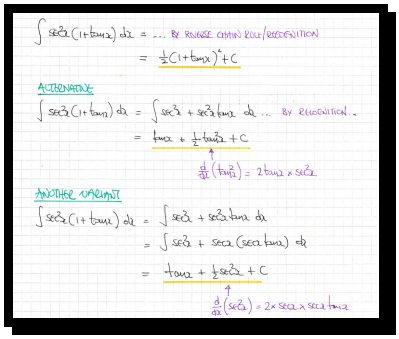
70. $\displaystyle\int 4\cos^2 x\,dx=2x+\sin 2x+C$



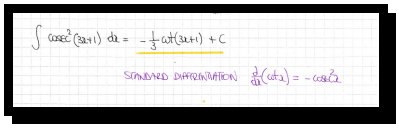
71. $\displaystyle\int \left(1+\tan^2 x\right)\sec^2 x\, dx = \tan x + \frac{1}{3}\tan^3 x + C$



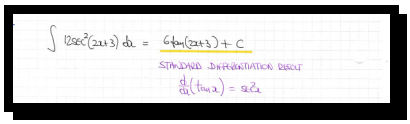
72. $\displaystyle\int \left(1+\tan x\right)\sec^2 x\, dx = \begin{bmatrix} \frac{1}{2}(1+\tan x)^2 + C \\ \tan x + \frac{1}{2}\tan^2 x + C \\ \tan x + \frac{1}{2}\sec^2 x + C \end{bmatrix}$



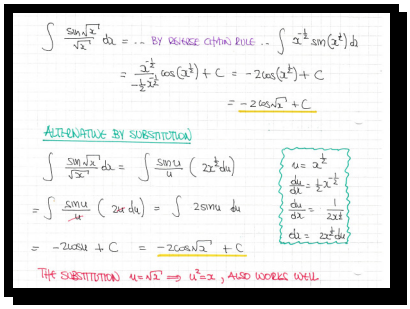
73. $\displaystyle\int \operatorname{cosec}^2(3x+1)\, dx = -\frac{1}{3}\cot(3x+1) + C$



74. $\displaystyle\int 12\sec^2(2x+3)\, dx = 6\tan(2x+3) + C$



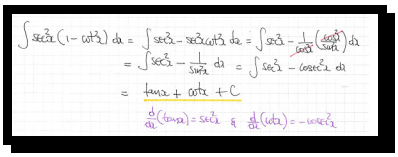
75. $\displaystyle\int \frac{\sin\sqrt{x}}{\sqrt{x}}\,dx = -2\cos\sqrt{x}+C$



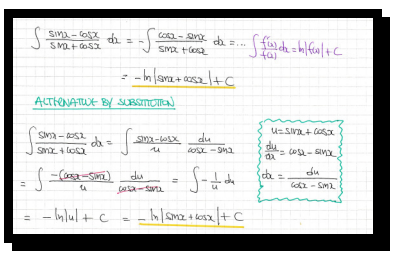
76. $\displaystyle\int 6\mathrm{e}^{2x+2}\,dx = 3\mathrm{e}^{2x+2}+C$



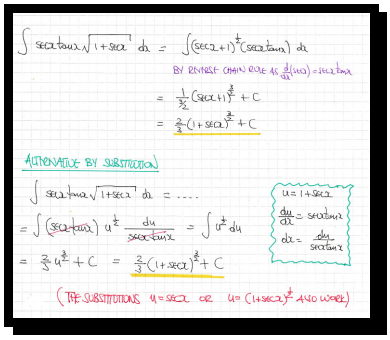
77. $\displaystyle\int \left(1-\cot^2 x\right)\sec^2 x\,dx = \tan x+\cot x+C$



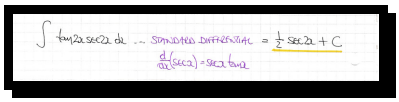
78. $\displaystyle\int \frac{\sin x-\cos x}{\sin x+\cos x}\,dx = -\ln\left|\sin x+\cos x\right|+C$



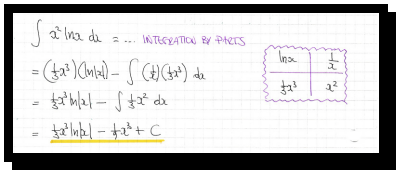
79. $\displaystyle\int \sec x \tan x \sqrt{1+\sec x}\ dx = \frac{2}{3}(1+\sec x)^{\frac{3}{2}} + C$



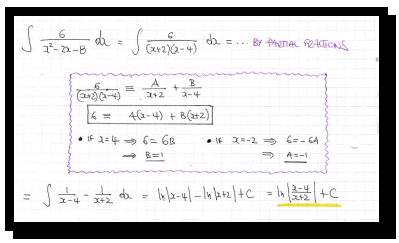
80. $\displaystyle\int \tan 2x \sec 2x\ dx = \frac{1}{2}\sec 2x + C$



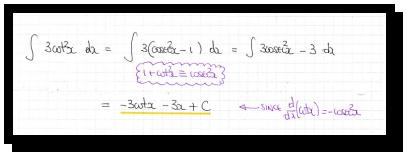
81. $\displaystyle\int x^2 \ln x\ dx = \frac{1}{3}x^3 \ln|x| - \frac{1}{9}x^3 + C$



82. $\displaystyle\int \frac{6}{x^2-2x-8}\ dx = \ln\left|\frac{x-4}{x+2}\right| + C$



83. $\int 3\cot^2 x \ dx = -3x - 3\cot x + C$



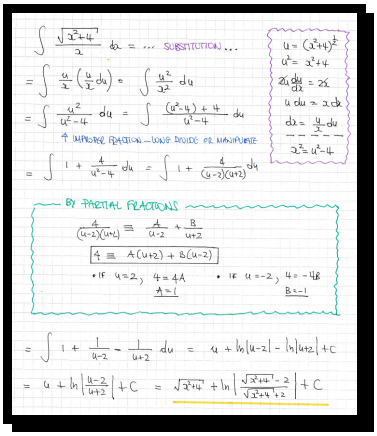
84. $\int \cos 2x \sin x \ dx =$

$$\begin{bmatrix} -\frac{2}{3}\cos^3 x + \cos x + C \\ -\frac{1}{6}\cos 3x + \frac{1}{2}\cos x + C \\ \frac{4}{3}\cos^3 x - \cos 2x \cos x + C \\ \frac{1}{3}\cos 2x \cos x + \frac{2}{3}\sin 2x \sin x + C \\ \frac{1}{3}\sin x \sin 2x + \frac{1}{3}\cos x + C \\ \frac{2}{3}\sin^2 x \cos x + \frac{1}{3}\cos x + C \\ \frac{1}{3}\left(1 + 2\sin^2 x\right)\cos x + C \\ -\frac{1}{4}\cos 3x + \frac{5}{4}\cos x + C \end{bmatrix}$$





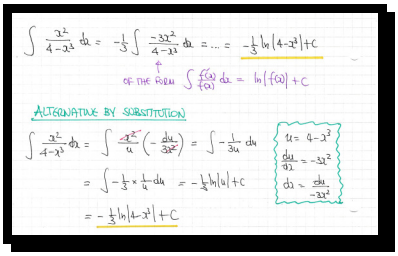
85. $\displaystyle\int \frac{\sqrt{x^2+4}}{x}\,dx=\sqrt{x^2+4}+\ln\left|\frac{\sqrt{x^2+4}-2}{\sqrt{x^2+4}+2}\right|+C$



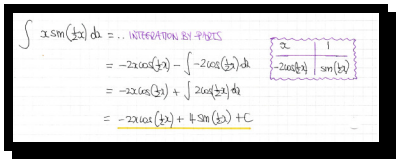
86. $\displaystyle\int 7(2x-3)^{\frac{5}{2}}\,dx=(2x-3)^{\frac{7}{2}}+C$



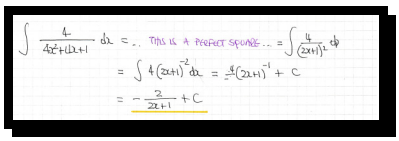
87. $\displaystyle\int \frac{x^2}{4-x^3}\,dx=-\frac{1}{3}\ln\left|4-x^3\right|+C$



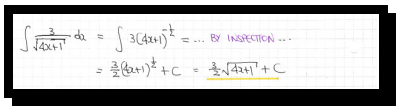
88. $\displaystyle\int x\sin\left(\frac{1}{2}x\right)\,dx=-2x\cos\left(\frac{1}{2}x\right)+4\sin\left(\frac{1}{2}x\right)+C$



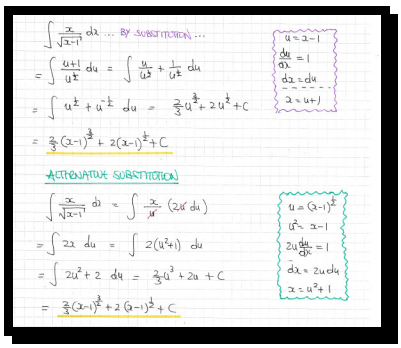
89. $\displaystyle\int \frac{4}{4x^2+4x+1}\,dx=-\frac{2}{2x+1}+C$



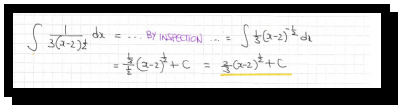
90. $\displaystyle\int \frac{3}{\sqrt{4x+1}}\,dx=\frac{3}{2}\sqrt{4x+1}+C$



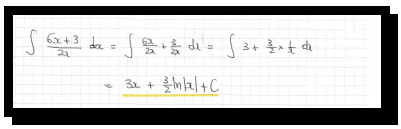
91. $\displaystyle\int \frac{x}{\sqrt{x-1}}\,dx=\frac{2}{3}(x-1)^{\frac{3}{2}}+2(x-1)^{\frac{1}{2}}+C$



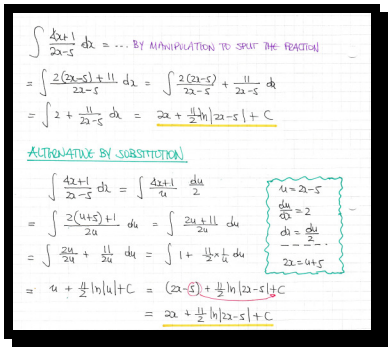
92. $\displaystyle\int \frac{1}{3(x-2)^{\frac{1}{2}}}\,dx = \frac{2}{3}(x-2)^{\frac{1}{2}}+C$



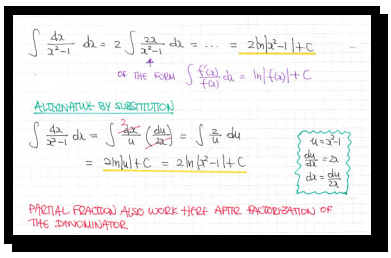
93. $\displaystyle\int \frac{6x+3}{2x}\,dx = 3x+\frac{3}{2}\ln|x|+C$



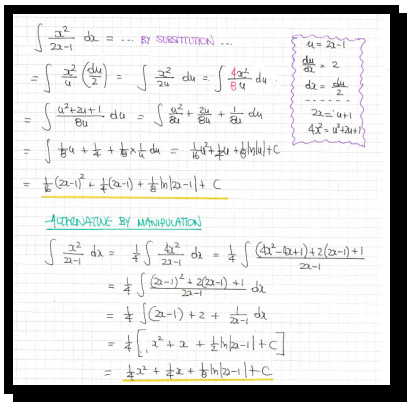
94. $\displaystyle\int \frac{4x+1}{2x-5}\,dx = 2x+\frac{11}{2}\ln|2x-5|+C$



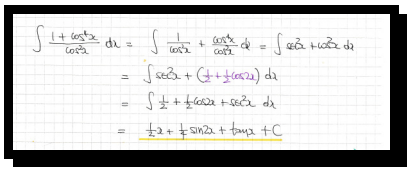
95. $\displaystyle\int \frac{4x}{x^2-1}\,dx = 2\ln|x^2-1|+C$



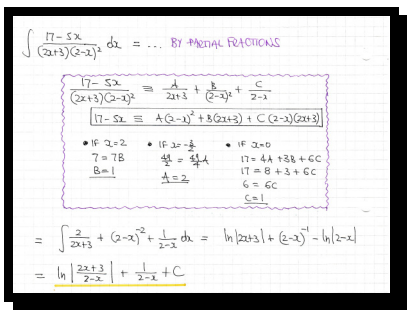
96. $$\int \frac{x^2}{2x-1}\,dx = \begin{bmatrix} \frac{1}{16}(2x-1)^2+\frac{1}{4}(2x-1)+\frac{1}{8}\ln|2x-1|+C \\ \frac{1}{4}x^2+\frac{1}{4}x+\frac{1}{8}\ln|2x-1|+C \end{bmatrix}$$



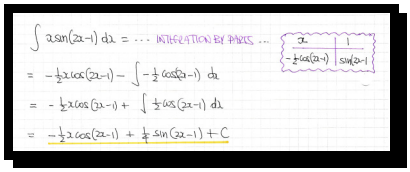
97. $$\int \frac{1+\cos^4 x}{\cos^2 x}\,dx = \frac{1}{2}x+\frac{1}{4}\sin 2x+\tan x+C$$



98. $$\int \frac{17-5x}{(2x+3)(2-x)^2}\,dx = \ln\left|\frac{2x+3}{2-x}\right|+\frac{1}{2-x}+C$$



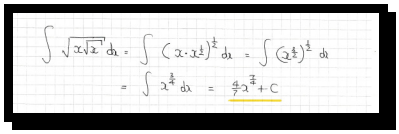
99. $\displaystyle\int x\sin(2x-1)\,dx=-\frac{1}{2}x\cos(2x-1)+\frac{1}{4}\sin(2x-1)+C$



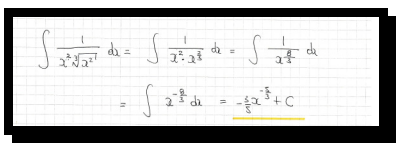
100. $\displaystyle\int 4(3x-2)^3\,dx=\frac{1}{3}(3x-2)^4+C$



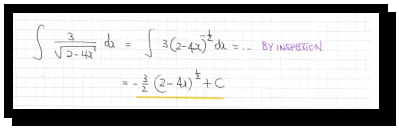
101. $\displaystyle\int \sqrt{x\sqrt{x}}\,dx=\frac{4}{7}x^{\frac{7}{4}}+C$



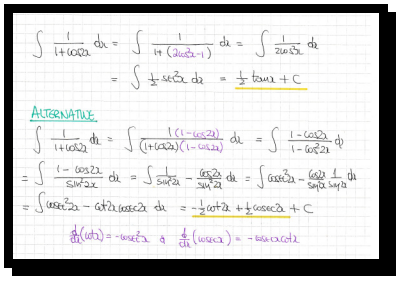
102. $\displaystyle\int \frac{1}{x^2\sqrt[3]{x^2}}\,dx=-\frac{3}{5}x^{-\frac{5}{3}}+C$



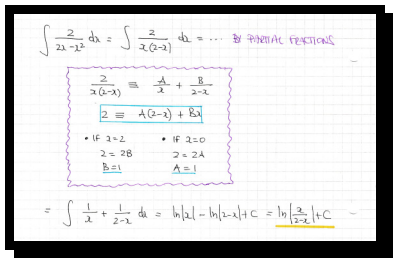
103. $\displaystyle\int \frac{3}{\sqrt{2-4x}}\,dx = -\frac{3}{2}(2-4x)^{\frac{1}{2}} + C$



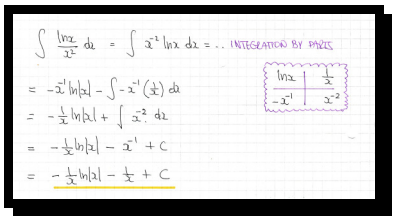
104. $\displaystyle\int \frac{1}{1+\cos 2x}\,dx = \begin{bmatrix} \frac{1}{2}\tan x + C \\ \frac{1}{2}\operatorname{cosec} 2x - \frac{1}{2}\cot 2x + C \end{bmatrix}$



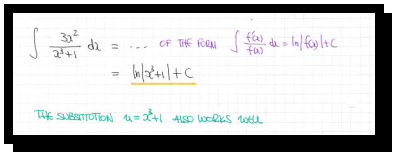
105. $\displaystyle\int \frac{2}{2x-x^2}\,dx = \ln\left|\frac{x}{2-x}\right| + C$



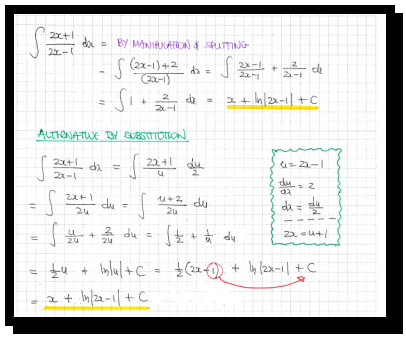
106. $\displaystyle\int \frac{\ln x}{x^2}\,dx = -\frac{1}{x} - \frac{\ln|x|}{x} + C$



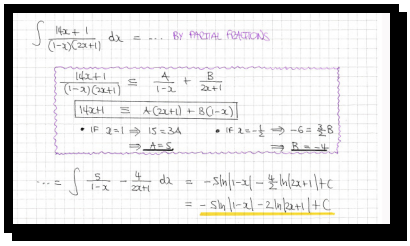
107. $\displaystyle\int \frac{3x^2}{x^3+1}\,dx = \ln\left|x^3+1\right| + C$



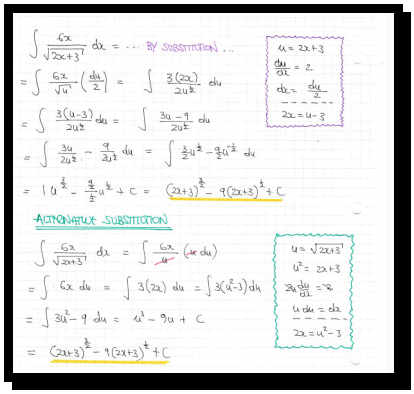
108. $\displaystyle\int \frac{2x+1}{2x-1}\,dx = x + \ln\left|2x-1\right| + C$



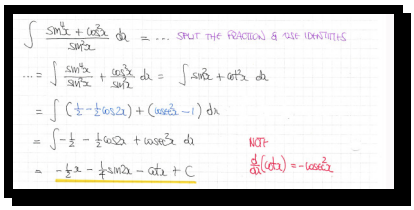
109. $\displaystyle\int \frac{14x+1}{(1-x)(2x+1)}\,dx=-5\ln|1-x|-2\ln|2x+1|+C$



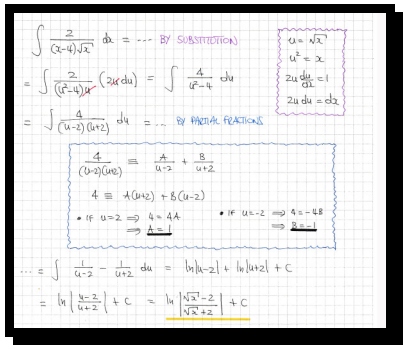
110. $\displaystyle\int \frac{6x}{\sqrt{2x+3}}\,dx=(2x+3)^{\frac{3}{2}}-9(2x+3)^{\frac{1}{2}}+C$



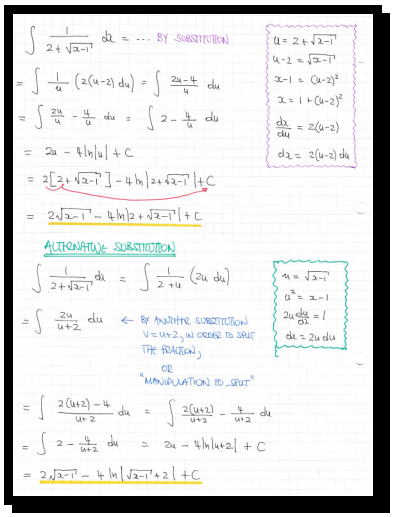
111. $\displaystyle\int \frac{\sin^4 x+\cos^2 x}{\sin^2 x}\,dx=-\frac{1}{2}x-\frac{1}{4}\sin 2x-\cot x+C$



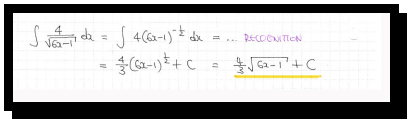
112. $\displaystyle\int \frac{2}{(x-4)\sqrt{x}}\,dx = \ln\left|\frac{\sqrt{x}-2}{\sqrt{x}+2}\right| + C$



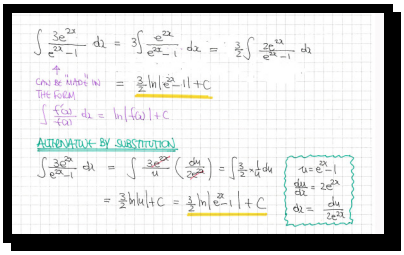
113. $\displaystyle\int \frac{1}{2+\sqrt{x-1}}\,dx = 2\sqrt{x-1} - 4\ln\left|2+\sqrt{x-1}\right| + C$



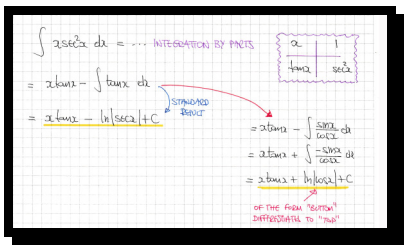
114. $\displaystyle\int \frac{4}{\sqrt{6x-1}}\,dx = \frac{4}{3}\sqrt{6x-1} + C$



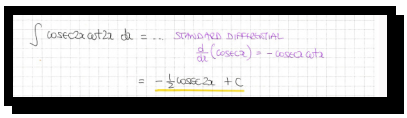
115. $\displaystyle\int \frac{3\mathrm{e}^{2x}}{\mathrm{e}^{2x}-1}\,dx=\frac{3}{2}\ln\left|\mathrm{e}^{2x}-1\right|+C$



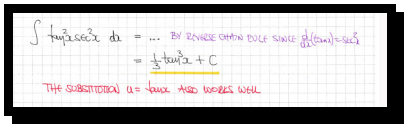
116. $\displaystyle\int x\sec^2 x\,\,dx=\begin{bmatrix} x\tan x-\ln\left|\sec x\right|+C \\ x\tan x+\ln\left|\cos x\right|+C \end{bmatrix}$



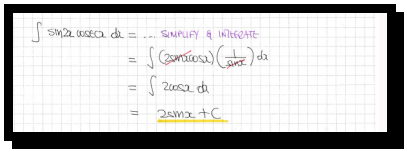
117. $\displaystyle\int \operatorname{cosec} 2x\cot 2x\,\,dx=-\frac{1}{2}\operatorname{cosec} 2x+C$



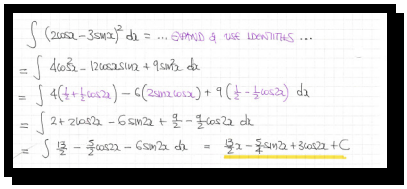
118. $\displaystyle\int \tan^2 x\sec^2 x\,\,dx=\frac{1}{3}\tan^3 x+C$



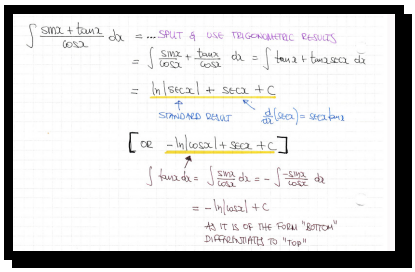
119. $\displaystyle\int \sin 2x \operatorname{cosec} x \ dx = 2\sin x + C$



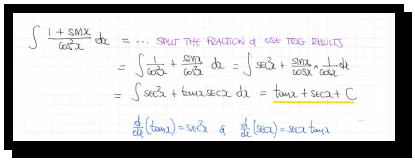
120. $\displaystyle\int (2\cos x - 3\sin x)^2 \ dx = \frac{13}{2}x - \frac{5}{4}\sin 2x + 3\cos 2x + C$



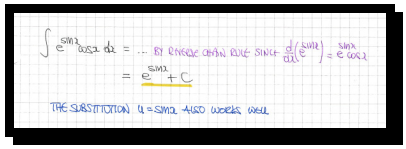
121. $\displaystyle\int \frac{\sin x + \tan x}{\cos x} \ dx = \begin{bmatrix} \sec x + \ln|\sec x| + C \\ \sec x - \ln|\cos x| + C \end{bmatrix}$



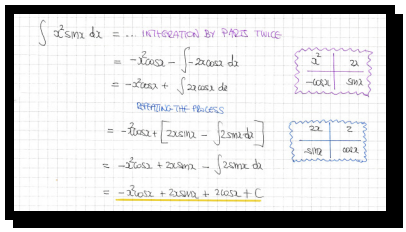
122. $\displaystyle\int \frac{1+\sin x}{\cos^2 x} \ dx = \tan x + \sec x + C$



123. $\displaystyle\int e^{\sin x}\cos x\ dx = e^{\sin x}+C$



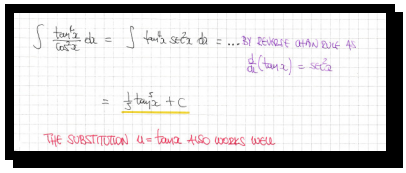
124. $\displaystyle\int x^2\sin x\ dx = -x^2\cos x+2x\sin x+2\cos x+C$



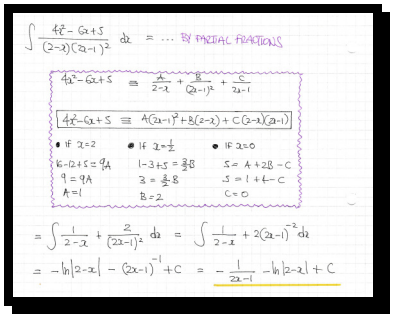
125. $\displaystyle\int (2x+1)^3\ dx = \frac{1}{8}(2x+1)^4+C$



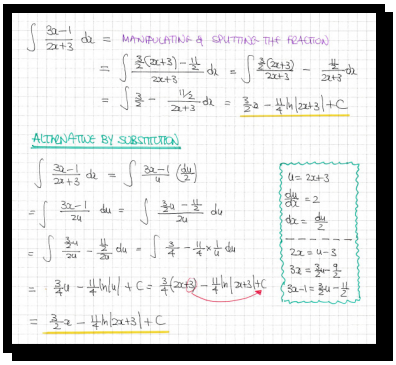
126. $\displaystyle\int \frac{\tan^4 x}{\cos^2 x}\ dx = \frac{1}{5}\tan^5 x+C$



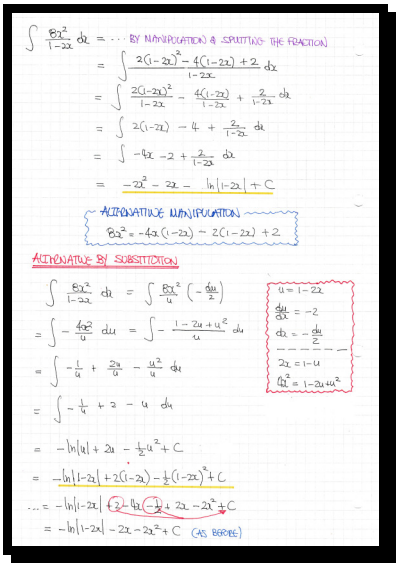
127. $\displaystyle\int \frac{4x^2-6x+5}{(2-x)(2x-1)^2}\,dx=-\frac{1}{2x-1}-\ln|2-x|+C$



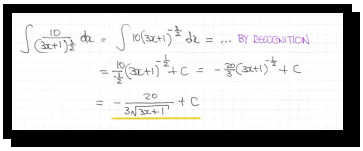
128. $\displaystyle\int \frac{3x-1}{2x+3}\,dx=\frac{3}{2}x-\frac{11}{4}\ln|2x+3|+C$



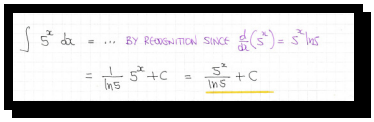
129. $$\int \frac{8x^2}{1-2x}\,dx = \begin{bmatrix} -2x^2-2x-\ln|1-2x|+C \\ 2(1-2x)-\frac{1}{2}(1-2x)^2-\ln|1-2x|+C \end{bmatrix}$$



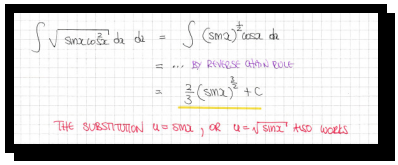
130. $$\int \frac{10}{(3x+1)^{\frac{3}{2}}}\,dx = -\frac{20}{3\sqrt{3x+1}}+C$$



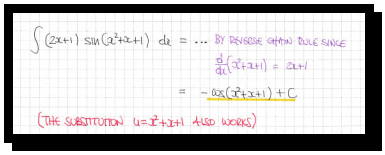
131. $$\int 5^x\,dx = \frac{5^x}{\ln 5}+C$$



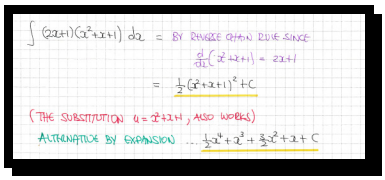
132. $\displaystyle\int \sqrt{\sin x \cos^2 x}\ dx = \frac{2}{3}(\sin x)^{\frac{3}{2}} + C$



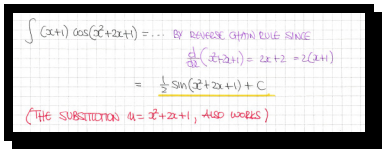
133. $\displaystyle\int (2x+1)\sin\left(x^2+x+1\right)\ dx = -\cos\left(x^2+x+1\right)+C$



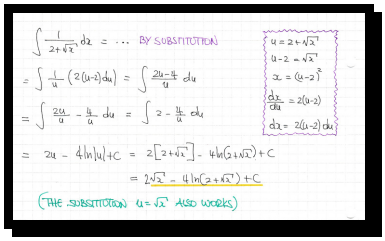
134. $\displaystyle\int (2x+1)\left(x^2+x+1\right)\ dx = \begin{bmatrix} \frac{1}{2}\left(x^2+x+1\right)^2 + C \\ \frac{1}{2}x^4 + x^3 + \frac{3}{2}x^2 + x + C \end{bmatrix}$



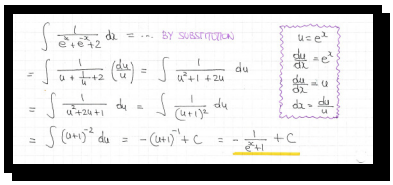
135. $\displaystyle\int (x+1)\cos\left(x^2+2x+1\right)\ dx = \frac{1}{2}\sin\left(x^2+2x+1\right)+C$



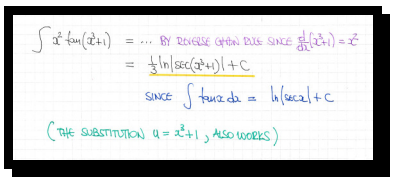
136. $\displaystyle\int \frac{1}{2+\sqrt{x}}\,dx = 2\sqrt{x} - 4\ln\left(2+\sqrt{x}\right) + C$



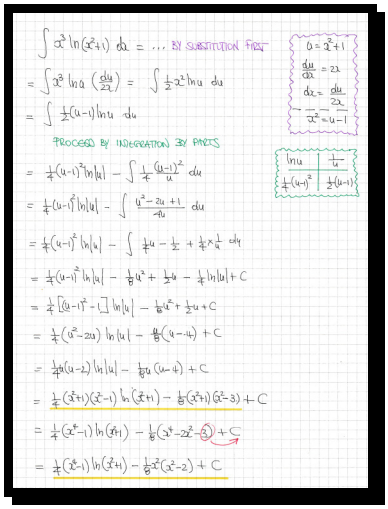
137. $\displaystyle\int \frac{1}{e^{x}+e^{-x}+2}\,dx = -\frac{1}{e^{x}+1} + C$



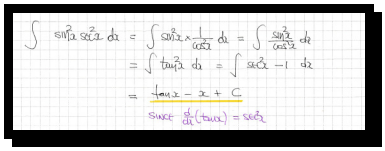
138. $\displaystyle\int x^{2}\tan\left(x^{3}+1\right)\,dx = \frac{1}{3}\ln\left|\sec\left(x^{3}+1\right)\right| + C$



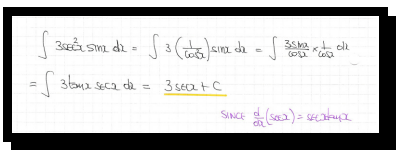
139. $\displaystyle\int x^3 \ln\left(x^2+1\right)\, dx = \begin{bmatrix} \frac{1}{4}\left(x^2+1\right)\left(x^2-1\right)\ln\left(x^2+1\right)-\frac{1}{8}\left(x^2+1\right)\left(x^2-3\right)+C \\ \frac{1}{4}\left(x^4-1\right)\ln\left(x^2+1\right)-\frac{1}{8}x^2\left(x^2-2\right)+C \end{bmatrix}$



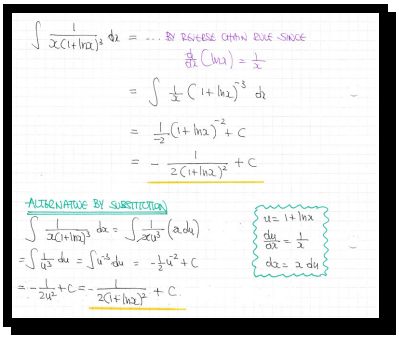
140. $\displaystyle\int \sin^2 x \sec^2 x\, dx = -x + \tan x + C$



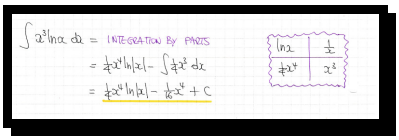
141. $\displaystyle\int 3\sec^2 x \sin x\, dx = 3\sec x + C$



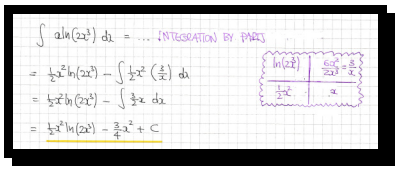
142. $$\int \frac{1}{x(1+\ln x)^3}\,dx = -\frac{1}{2(1+\ln x)^2} + C$$



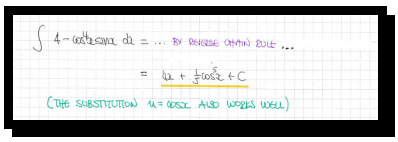
143. $$\int x^3 \ln x\,\,dx = \frac{1}{4}x^4 \ln|x| - \frac{1}{16}x^4 + C$$



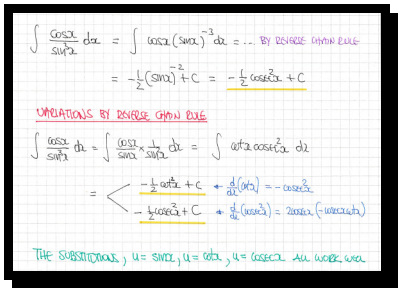
144. $$\int x\ln\left(2x^3\right)\,dx = \frac{1}{2}x^2 \ln\left|2x^3\right| - \frac{3}{4}x^2 + C$$



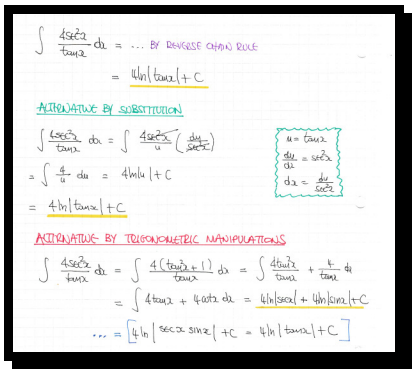
145. $$\int 4-\cos^4 x\sin x\,\,dx = 4x + \frac{1}{5}\cos^5 x + C$$



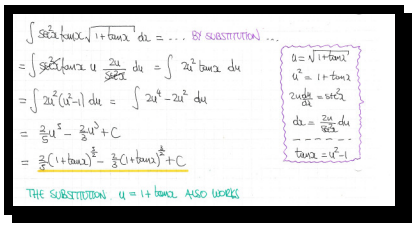
146. $$\int \frac{\cos x}{\sin^3 x}\,dx = \begin{bmatrix} -\frac{1}{2}\cot^2 x + C \\ -\frac{1}{2}\operatorname{cosec}^2 x + C \end{bmatrix}$$



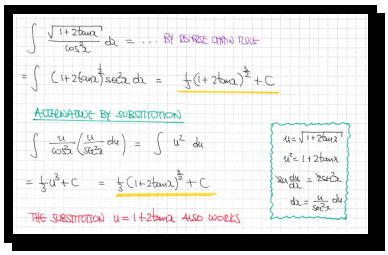
147. $$\int \frac{4\sec^2 x}{\tan x}\,dx = \begin{bmatrix} 4\ln|\tan x| + C \\ 4\ln|\sec x| + 4\ln|\sin x| + C \end{bmatrix}$$



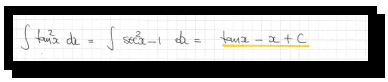
148. $$\int \sec^2 x \tan x \sqrt{1+\tan x}\,dx = \frac{2}{5}(1+\tan x)^{\frac{5}{2}} - \frac{2}{3}(1+\tan x)^{\frac{3}{2}} + C$$



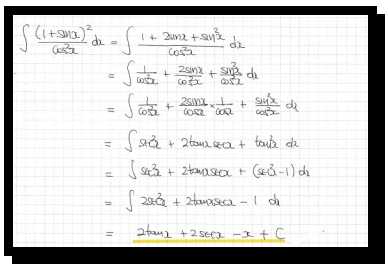
149. $\displaystyle\int \frac{\sqrt{1+2\tan x}}{\cos^2 x}\,dx = \frac{1}{3}(1+2\tan x)^{\frac{3}{2}} + C$



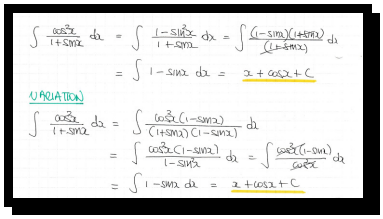
150. $\displaystyle\int \tan^2 x\,\,dx = -x + \tan x + C$



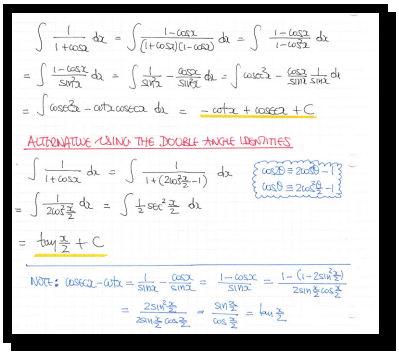
151. $\displaystyle\int \frac{(1+\sin x)^2}{\cos^2 x}\,dx = -x + 2\tan x + 2\sec x + C$



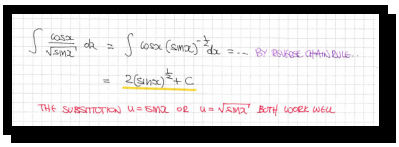
152. $\displaystyle\int \frac{\cos^2 x}{1+\sin x}\,dx = x + \cos x + C$



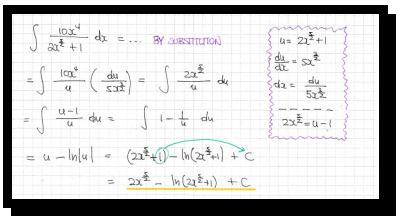
153. $$\int \frac{1}{1+\cos x}\,dx = \begin{bmatrix} \operatorname{cosec} x - \cot x + C \\ \tan\left(\frac{1}{2}x\right) + C \end{bmatrix}$$



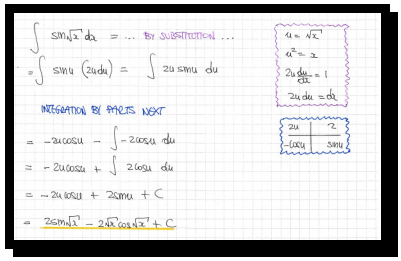
154. $$\int \frac{\cos x}{\sqrt{\sin x}}\,dx = 2\sqrt{\sin x} + C$$



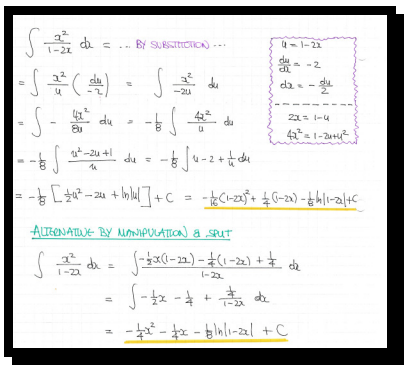
155. $$\int \frac{10x^4}{2x^{\frac{5}{2}}+1}\,dx = 2x^{\frac{5}{2}} - \ln\left(2x^{\frac{5}{2}}+1\right) + C$$



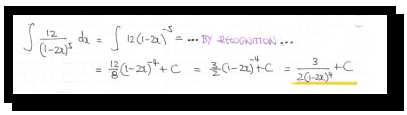
156. $\displaystyle\int \sin\sqrt{x}\ dx = 2\sin\sqrt{x} - 2\sqrt{x}\cos\sqrt{x} + C$



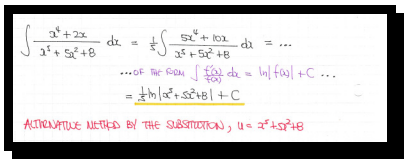
157. $\displaystyle\int \frac{x^2}{1-2x}\ dx = \begin{bmatrix} -\frac{1}{16}(1-2x)^2 + \frac{1}{4}(1-2x) - \frac{1}{8}\ln|1-2x| + C \\ -\frac{1}{4}x^2 - \frac{1}{4}x - \frac{1}{8}\ln|1-2x| + C \end{bmatrix}$



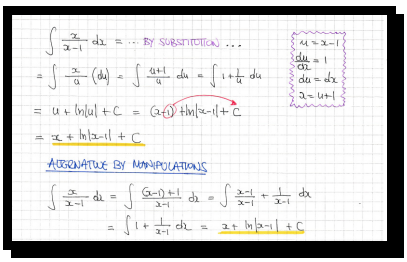
158. $\displaystyle\int \frac{12}{(1-2x)^5}\ dx = \frac{3}{2(1-2x)^4} + C$



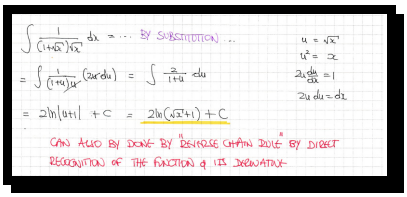
159. $$\int \frac{x^4+2x}{x^5+5x^2+8}\,dx=\frac{1}{5}\ln\left|x^5+5x^2+8\right|+C$$



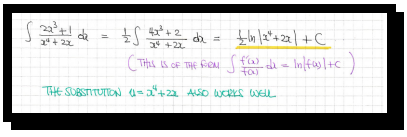
160. $$\int \frac{x}{x-1}\,dx=x+\ln\left|x-1\right|+C$$



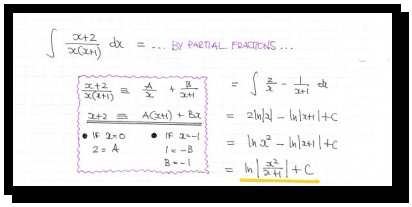
161. $$\int \frac{1}{\left(1+\sqrt{x}\right)\sqrt{x}}\,dx=2\ln\left(1+\sqrt{x}\right)+C$$



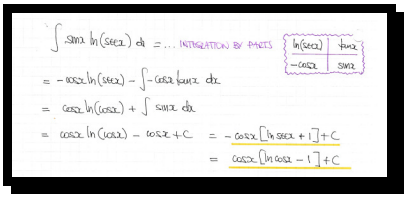
162. $$\int \frac{2x^3+1}{x^4+2x}\,dx=\frac{1}{2}\ln\left|x^4+2x\right|+C$$



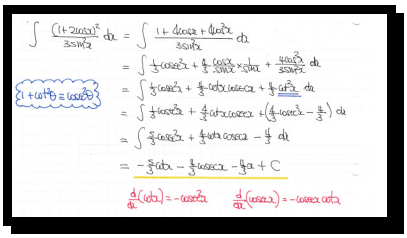
163. $\displaystyle\int \frac{x+2}{x(x+1)}\,dx = \ln\left|\frac{x^2}{x+1}\right| + C$



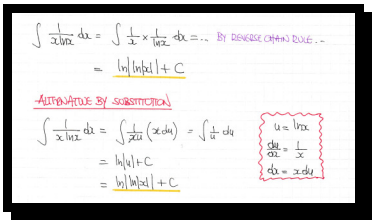
164. $\displaystyle\int \sin x \ln(\sec x)\,dx = \begin{bmatrix} -\left[1+\ln|\sec x|\right]\cos x \\ \left[-1+\ln|\cos x|\right]\cos x \end{bmatrix} + C$



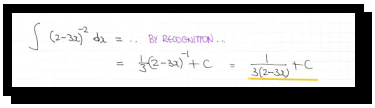
165. $\displaystyle\int \frac{(1+2\cos x)^2}{3\sin^2 x}\,dx = -\frac{5}{3}\cot x - \frac{4}{3}\operatorname{cosec} x - \frac{4}{3}x + C$



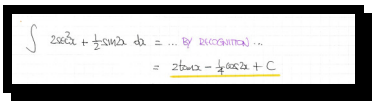
166. $\displaystyle\int \frac{1}{x\ln x}\,dx=\ln\left|\ln\left|x\right|\right|+C$



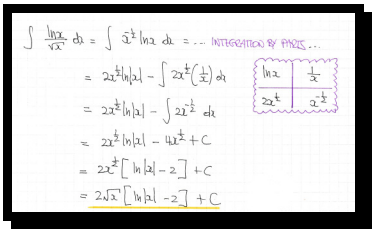
167. $\displaystyle\int (2-3x)^{-2}\,dx=\frac{1}{3(2-3x)}+C$



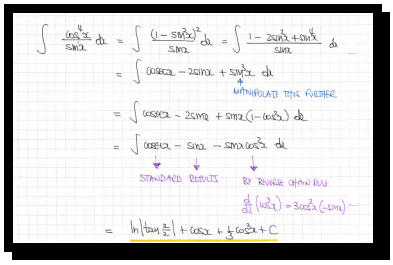
168. $\displaystyle\int 2\sec^2 x+\frac{1}{2}\sin 2x\,\,dx=2\tan x-\frac{1}{4}\cos 2x+C$



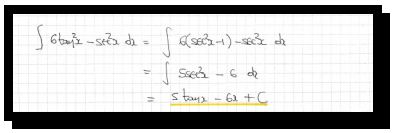
169. $\displaystyle\int \frac{\ln x}{\sqrt{x}}\,dx=2\sqrt{x}\left[\ln\left|x\right|-2\right]+C$



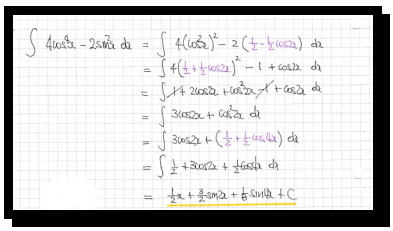
170. $\displaystyle\int \frac{\cos^4 x}{\sin x}\,dx = \ln\left|\tan\left(\frac{1}{2}x\right)\right| + \cos x + \frac{1}{3}\cos^3 x + C$



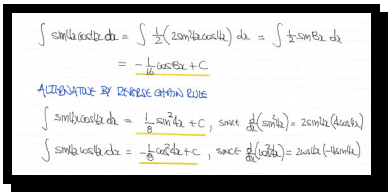
171. $\displaystyle\int 6\tan^2 x - \sec^2 x\,dx = 5\tan x - 6x + C$



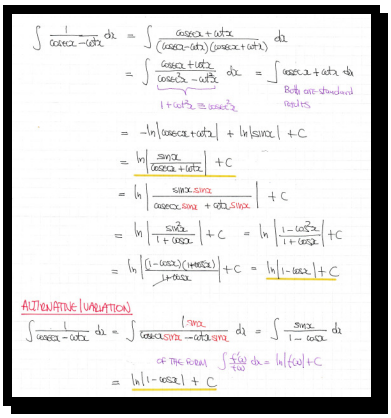
172. $\displaystyle\int 6\cos^4 x - 2\sin^2 x\,dx = \frac{1}{2}x + \frac{3}{2}\sin 2x + \frac{1}{8}\sin 4x + C$



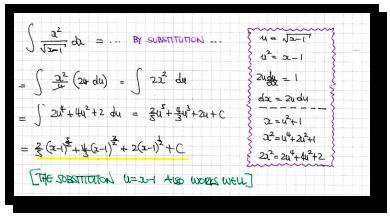
173. $\displaystyle\int \sin 4x\cos 4x\ dx = \begin{bmatrix} -\frac{1}{16}\cos 8x + C \\ \frac{1}{8}\sin^2 4x + C \\ -\frac{1}{8}\cos^2 4x + C \end{bmatrix}$



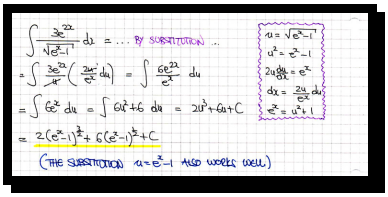
174. $\displaystyle\int \frac{1}{\operatorname{cosec} x - \cot x}\ dx = \begin{bmatrix} \ln\left|\dfrac{\sin x}{\operatorname{cosec} x + \cot x}\right| + C \\ \ln|1-\cos x| + C \end{bmatrix}$



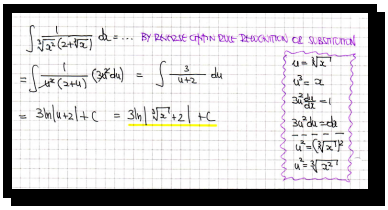
175. $\displaystyle\int \frac{x^2}{\sqrt{x-1}}\ dx = \frac{2}{5}(x-1)^{\frac{5}{2}} + \frac{4}{3}(x-1)^{\frac{3}{2}} + 2(x-1)^{\frac{1}{2}} + C$



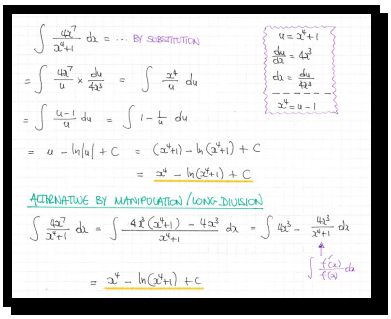
176. $$\int \frac{3\mathrm{e}^{2x}}{\sqrt{\mathrm{e}^{x}-1}}\,dx=2\left(\mathrm{e}^{x}-1\right)^{\frac{3}{2}}+6\left(\mathrm{e}^{x}-1\right)^{\frac{1}{2}}+C$$



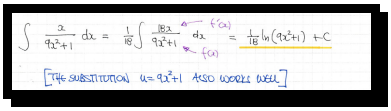
177. $$\int \frac{1}{\left(2+\sqrt[3]{x}\right)\sqrt[3]{x^{2}}}\,dx=3\ln\left|2+\sqrt[3]{x}\right|+C$$



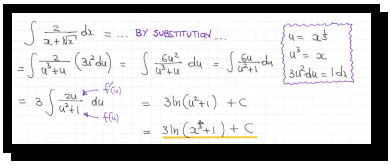
178. $$\int \frac{4x^{7}}{x^{4}+1}\,dx=x^{4}-\ln\left(x^{4}+1\right)+C$$



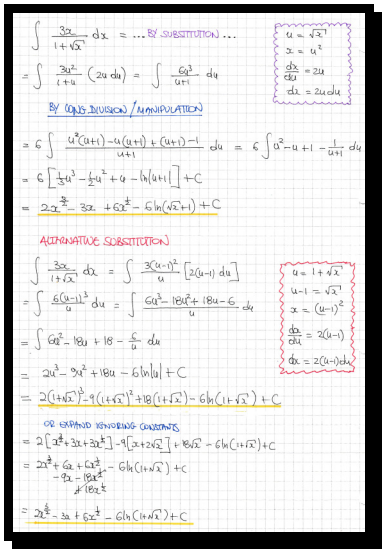
179. $$\int \frac{x}{9x^{2}+1}\,dx=\frac{1}{18}\ln\left(9x^{2}+1\right)+C$$



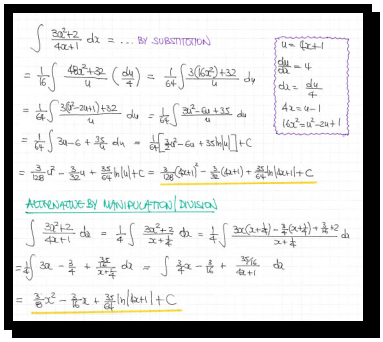
180. $\displaystyle\int \frac{2}{x+\sqrt[3]{x}}\,dx = 3\ln\left|x+\sqrt[3]{x}\right| + C$



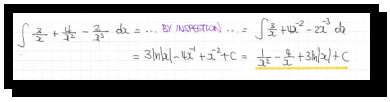
181. $\displaystyle\int \frac{3x}{1+\sqrt{x}}\,dx = \begin{bmatrix} 2x^{\frac{3}{2}} - 3x + 6x^{\frac{1}{2}} - 6\ln\left|1+\sqrt{x}\right| + C \\ 2\left(1+\sqrt{x}\right)^3 - 9\left(1+\sqrt{x}\right)^2 + 18\left(1+\sqrt{x}\right) - 6\ln\left|1+\sqrt{x}\right| + C \end{bmatrix}$



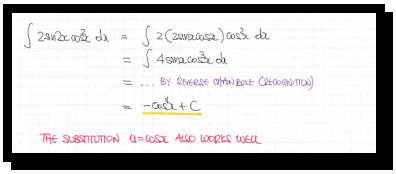
182. $\displaystyle\int \frac{3x^2+2}{4x+1}\,dx = \begin{bmatrix} \frac{3}{8}x^2 - \frac{3}{16}x + \frac{35}{64}\ln\left|4x+1\right| + C \\ \frac{3}{128}(4x+1)^2 - \frac{3}{32}(4x+1) + \frac{35}{64}\ln\left|4x+1\right| + C \end{bmatrix}$



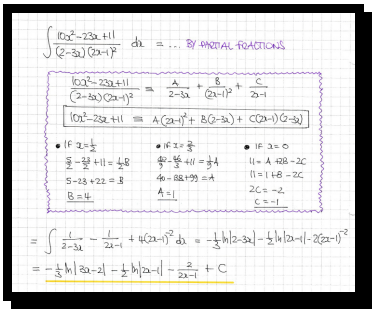
183. $\displaystyle\int \frac{3}{x}+\frac{4}{x^2}-\frac{2}{x^3}\,dx=\frac{1}{x^2}-\frac{4}{x}+3\ln|x|+C$



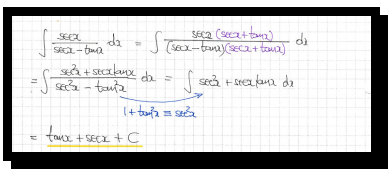
184. $\displaystyle\int 2\sin 2x\cos^2 x\,dx=-\cos^4 x+C$



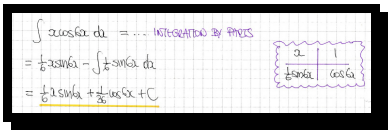
185. $\displaystyle\int \frac{10x^2-23x+11}{(2-3x)(2x-1)^2}\,dx=-\frac{1}{3}\ln|3x-2|-\frac{1}{2}\ln|2x-1|-\frac{2}{2x-1}+C$



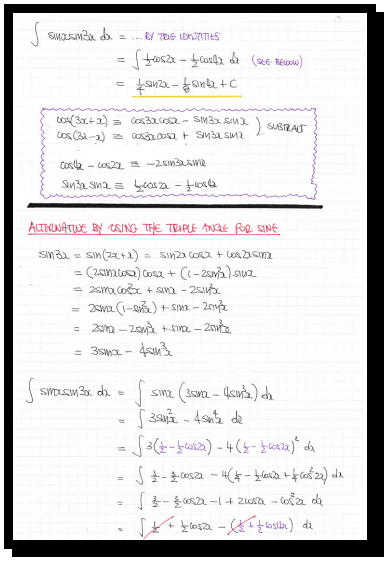
186. $\displaystyle\int \frac{\sec x}{\sec x-\tan x}\,dx=\tan x+\sec x+C$



187. $\displaystyle\int x\cos 6x\ dx=\frac{1}{6}x\sin 6x+\frac{1}{36}\cos 6x+C$

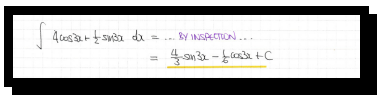


188. $\displaystyle\int \sin x\sin 3x\ dx=\begin{bmatrix}\frac{1}{4}\sin 2x-\frac{1}{8}\sin 4x+C\\ \frac{1}{8}\cos x\sin 3x-\frac{3}{8}\sin x\cos 3x+C\end{bmatrix}$

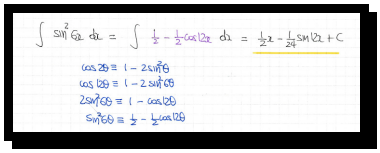




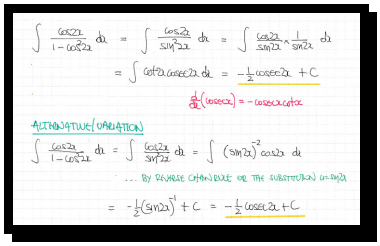
189. $\displaystyle\int 4\cos 3x+\frac{1}{2}\sin 3x\ dx=\frac{4}{3}\sin 3x-\frac{1}{6}\cos 3x+C$



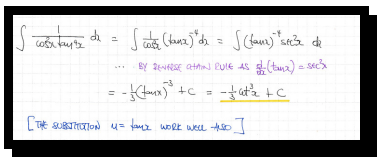
190. $\displaystyle\int \sin^2 6x \ dx = \frac{1}{2}x - \frac{1}{24}\sin 12x + C$



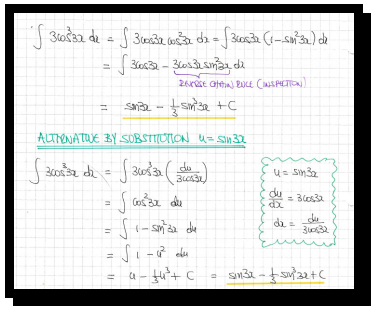
191. $\displaystyle\int \frac{\cos 2x}{1-\cos^2 2x} \ dx = -\frac{1}{2}\operatorname{cosec} 2x + C$



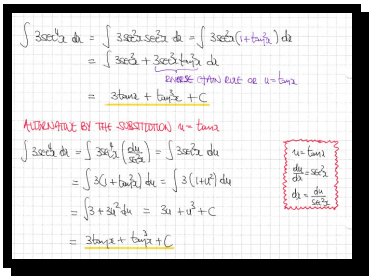
192. $\displaystyle\int \frac{1}{\cos^2 x \tan^2 x} \ dx = -\frac{1}{3}\cot^3 x + C$



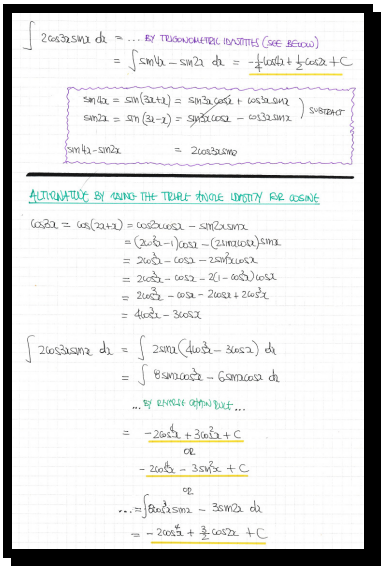
193. $\displaystyle\int 3\cos^3 3x \ dx = \sin 3x - \frac{1}{3}\sin^3 3x + C$



194. $\displaystyle\int 3\sec^4 x \ dx = 3\tan x + \tan^3 x + C$

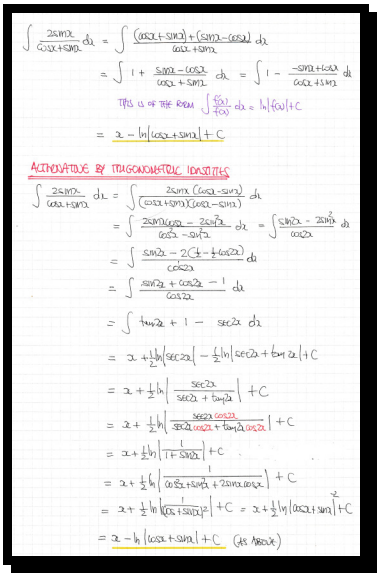


195. $\displaystyle\int 2\sin x\cos 3x \ dx = \begin{bmatrix} \frac{1}{2}\cos 2x - \frac{1}{4}\cos 4x + C \\ -2\cos^4 x + 3\cos^2 x + C \\ -2\cos^4 x - 3\sin^2 x + C \\ -2\cos^4 x + \frac{3}{2}\cos 2x + C \\ \frac{1}{4}\cos x\cos 3x + \frac{3}{4}\sin x\sin 3x + C \end{bmatrix}$

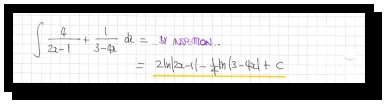




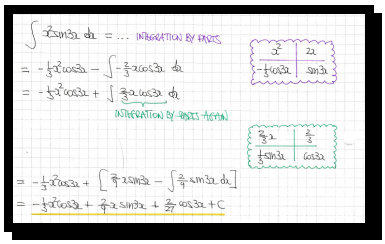
196. $$\int \frac{2\sin x}{\cos x+\sin x}\,dx=\begin{bmatrix} x-\ln\left|\cos x+\sin x\right|+C \\ x+\frac{1}{2}\ln\left|\sec 2x\right|-\frac{1}{2}\ln\left|\sec 2x+\tan 2x\right|+C \end{bmatrix}$$



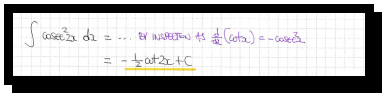
197. $$\int \frac{4}{2x-1}+\frac{1}{3-4x}\,dx=2\ln\left|2x-1\right|-\frac{1}{4}\ln\left|3-4x\right|+C$$



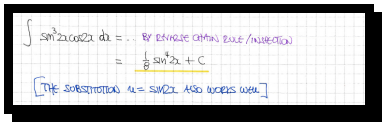
198. $$\int x^2\sin 3x\;\,dx=-\frac{1}{3}x^2\cos 3x+\frac{2}{9}x\sin 3x+\frac{2}{27}\cos 3x+C$$



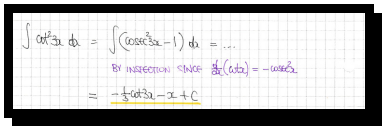
199. $\displaystyle\int \operatorname{cosec}^2 2x \ dx = -\frac{1}{2}\cot 2x + C$



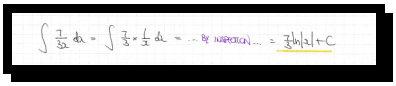
200. $\displaystyle\int \sin^3 2x \cos 2x \ dx = \frac{1}{8}\sin^4 2x + C$



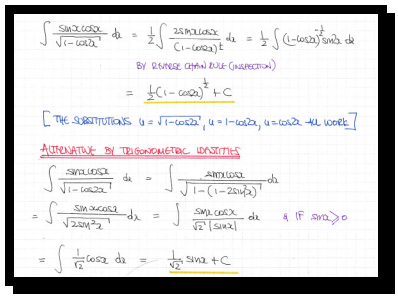
201. $\displaystyle\int \cot^2 3x \ dx = -x - \frac{1}{3}\cot 3x + C$



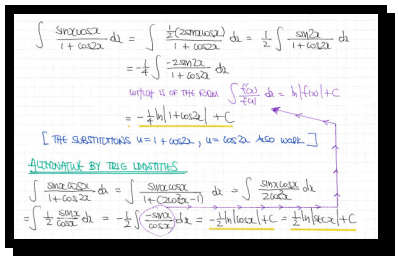
202. $\displaystyle\int \frac{7}{3x} \ dx = \frac{7}{3}\ln|x| + C$



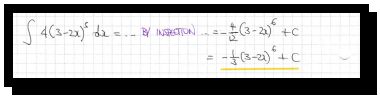
203. $\displaystyle\int \frac{\sin x\cos x}{\sqrt{1-\cos 2x}}\,dx = \begin{bmatrix} \frac{1}{2}\sqrt{1-\cos 2x}+C \\ \frac{1}{\sqrt{2}}\sin x + C \end{bmatrix}$



204. $\displaystyle\int \frac{\sin x\cos x}{1+\cos 2x}\,dx = \begin{bmatrix} -\frac{1}{4}\ln\left|1+\cos 2x\right|+C \\ -\frac{1}{2}\ln\left|\cos x\right|+C \\ \frac{1}{2}\ln\left|\sec x\right|+C \end{bmatrix}$



205. $\displaystyle\int 4(3-2x)^5\,dx = -\frac{1}{3}(3-2x)^6 + C$



206. $\displaystyle\int \frac{1+\sin x}{\cos x}\,dx = \begin{bmatrix} \ln\left|\sec^2 x+\sec x\tan x\right|+C \\ -\ln\left|1-\sin x\right|+C \end{bmatrix}$

$\int \frac{1+\sin x}{\cos x}\,dx = \int \frac{1}{\cos x}+\frac{\sin x}{\cos x}\,dx = \int \sec x+\tan x\,dx$

... "STANDARD RESULTS" ...

$= \ln\left|\sec x+\tan x\right| + \ln\left|\sec x\right| + C$

$= \ln\left|\sec^2 x+\sec x\tan x\right|+C$

OR MORE FURTHER

$= \ln\left|\frac{1}{\cos^2 x}+\frac{\sin x}{\cos^2 x}\right|+C = \ln\left|\frac{1+\sin x}{\cos^2 x}\right|+C$

$= \ln\left|\frac{1+\sin x}{1-\sin^2 x}\right|+C = \ln\left|\frac{1+\sin x}{(1-\sin x)(1+\sin x)}\right|+C$

$= \ln\left|\frac{1}{1-\sin x}\right|+C = -\ln\left|1-\sin x\right|+C$

ALTERNATIVELY BY TRIGONOMETRIC MANIPULATIONS

$\int \frac{1+\sin x}{\cos x}\,dx = \int \frac{(1+\sin x)(1-\sin x)}{\cos x(1-\sin x)}\,dx = \int \frac{1-\sin^2 x}{\cos x(1-\sin x)}\,dx$

$= \int \frac{\cos^2 x}{\cos x(1-\sin x)}\,dx = \int \frac{\cos x}{1-\sin x}\,dx$

$= -\int \frac{-\cos x}{1-\sin x}\,dx = -\ln\left|1-\sin x\right|+C$

[WHICH IS OF THE FORM $\int \frac{f'(x)}{f(x)}\,dx = \ln|f(x)|+C$]

207. $\displaystyle\int \sin 2x\sec x\;dx = -2\cos x + C$

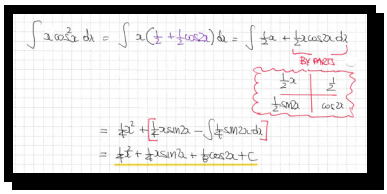
$\int \sin 2x\sec x\,dx = \int (2\sin x\cos x)\times\frac{1}{\cos x}\,dx = \int 2\sin x\,dx$

$= -2\cos x + C$

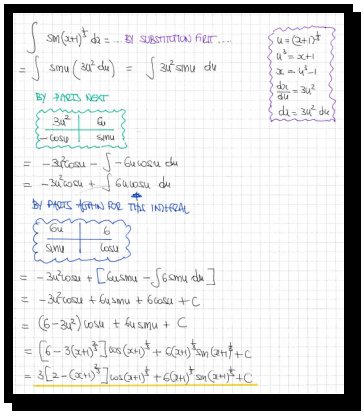
208. $\displaystyle\int \sin 2x \sin x \ dx = \begin{bmatrix} \frac{2}{3}\sin^3 x + C \\ \frac{1}{2}\sin x - \frac{1}{6}\sin 3x + C \\ \frac{1}{2}\cos x \sin 2x - \frac{2}{3}\sin x \cos 2x + C \end{bmatrix}$



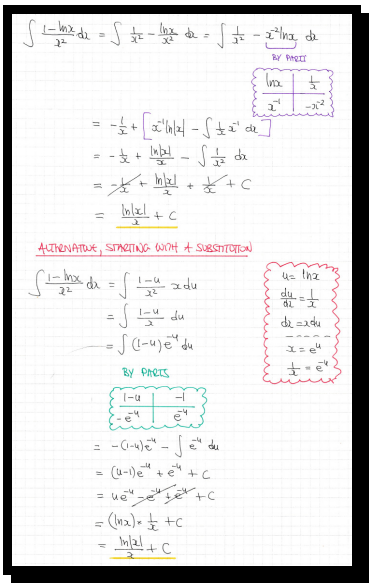
209. $\displaystyle\int x\cos^2 x \ dx = \frac{1}{4}x^2 + \frac{1}{4}x\sin 2x + \frac{1}{8}\cos 2x + C$



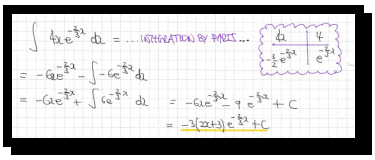
210. $\displaystyle\int \sin\left(x+1\right)^{\frac{1}{3}}\,dx = 3\left[2-\left(x+1\right)^{\frac{2}{3}}\right]\cos\left(x+1\right)^{\frac{1}{3}} + 6\left(x+1\right)^{\frac{1}{3}}\sin\left(x+1\right)^{\frac{1}{3}} + C$



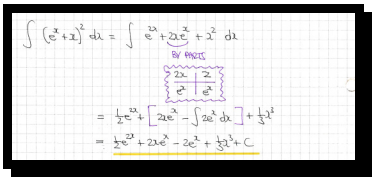
211. $\displaystyle\int \frac{1-\ln x}{x^2}\,dx = \frac{\ln|x|}{x} + C$



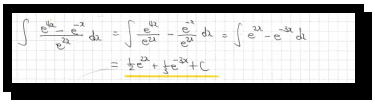
212. $\displaystyle\int 4x\mathrm{e}^{-\frac{2}{3}x}\,dx = -3\left(2x+3\right)\mathrm{e}^{-\frac{2}{3}x} + C$



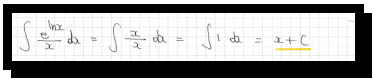
213. $\displaystyle\int \left(\mathrm{e}^{x}+x\right)^{2}\,dx=\frac{1}{2}\mathrm{e}^{2x}+2x\mathrm{e}^{x}-2\mathrm{e}^{x}+\frac{1}{3}x^{3}+C$



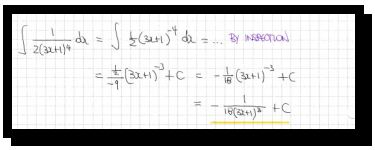
214. $\displaystyle\int \frac{\mathrm{e}^{4x}-\mathrm{e}^{-x}}{\mathrm{e}^{2x}}\,dx=\frac{1}{2}\mathrm{e}^{2x}+\frac{1}{3}\mathrm{e}^{-3x}+C$



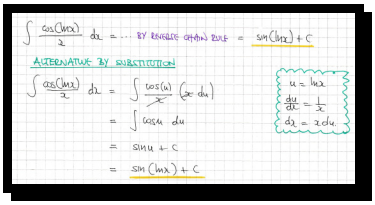
215. $\displaystyle\int \frac{\mathrm{e}^{\ln x}}{x}\,dx=x+C$



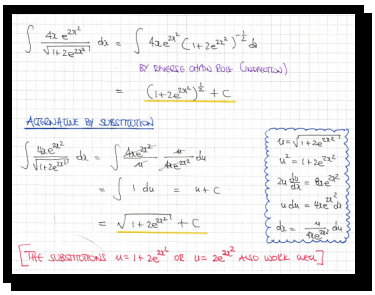
216. $\displaystyle\int \frac{1}{2(3x+1)^{4}}\,dx=-\frac{1}{18(3x+1)^{3}}+C$



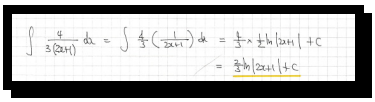
217. $\displaystyle\int \frac{\cos(\ln x)}{x}\,dx = \sin(\ln x) + C$



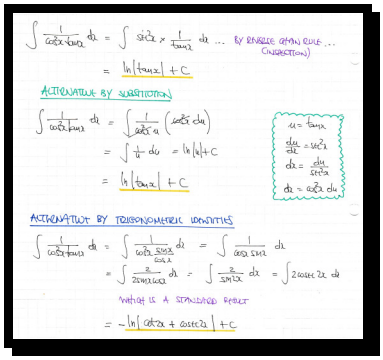
218. $\displaystyle\int \frac{4xe^{2x^2}}{\sqrt{1+2e^{2x^2}}}\,dx = \sqrt{1+2e^{2x^2}} + C$



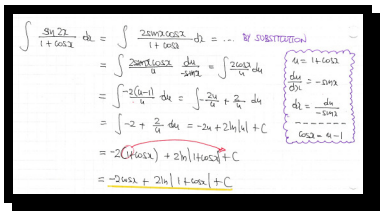
219. $\displaystyle\int \frac{4}{3(2x+1)}\,dx = \frac{2}{3}\ln|2x+1| + C$



220. $$\int \frac{1}{\cos^2 x \tan x}\, dx = \begin{bmatrix} \ln|\tan x| + C \\ -\ln|\cot 2x + \operatorname{cosec} 2x| + C \end{bmatrix}$$



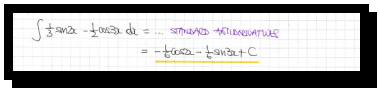
221. $$\int \frac{\sin 2x}{1+\cos x}\, dx = -2\cos x + 2\ln|1+\cos x| + C$$



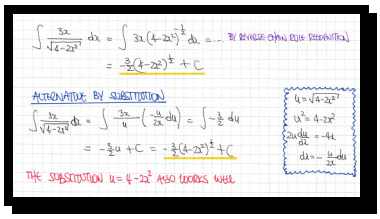
222. $$\int \sin^3 x \; dx = \frac{1}{3}\cos^2 x - \cos x + C$$



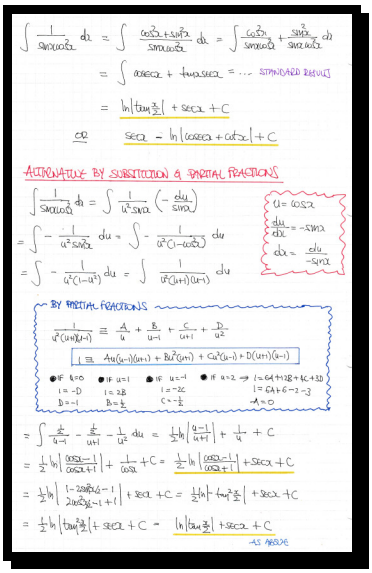
223. $\displaystyle\int \frac{1}{3}\sin 2x-\frac{1}{2}\cos 3x\ dx=-\frac{1}{6}\cos 2x-\frac{1}{6}\sin 3x+C$



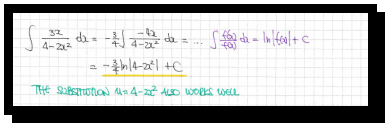
224. $\displaystyle\int \frac{3x}{\sqrt{4-2x^2}}\ dx=-\frac{3}{2}\left(4-2x^2\right)^{\frac{1}{2}}+C$



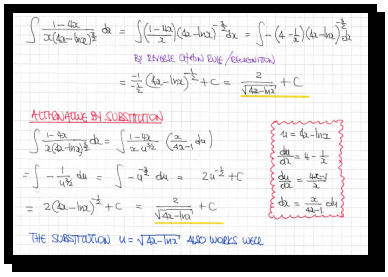
225. $\displaystyle\int \frac{1}{\sin x\cos^2 x}\ dx=\begin{bmatrix} \ln\left|\tan\left(\frac{1}{2}x\right)\right|+\sec x+C \\ \sec x-\ln\left|\operatorname{cosec}x+\cot x\right|+C \\ \frac{1}{2}\ln\left|\dfrac{\cos x-1}{\cos x+1}\right|+\sec x+C \end{bmatrix}$



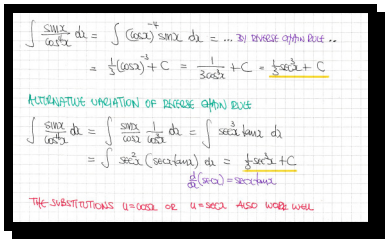
226. $\displaystyle\int \frac{3x}{4-2x^2}\,dx = -\frac{3}{4}\ln\left|4-2x^2\right| + C$



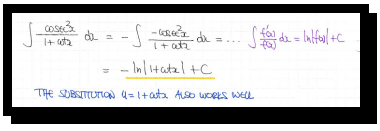
227. $\displaystyle\int \frac{1-4x}{x\left(4x-\ln x\right)^{\frac{3}{2}}}\,dx = \frac{2}{\sqrt{4x-\ln x}} + C$



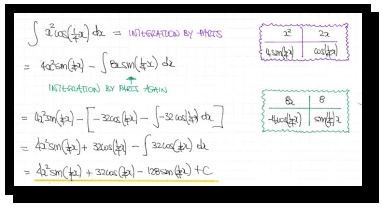
228. $\displaystyle\int \frac{\sin x}{\cos^4 x}\,dx = \frac{1}{3}\sec^3 x + C$



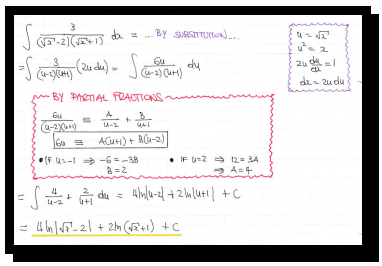
229. $\displaystyle\int \frac{\operatorname{cosec}^2 x}{1+\cot x}\,dx = -\ln\left|1+\cot x\right| + C$



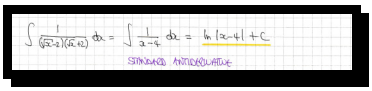
230. $\displaystyle\int x^2\cos\left(\frac{1}{4}x\right)\,dx = 4x^2\sin\left(\frac{1}{4}x\right)+32\cos\left(\frac{1}{4}x\right)-128\sin\left(\frac{1}{4}x\right)+C$



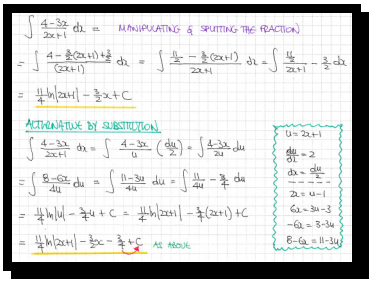
231. $\displaystyle\int \frac{3}{\left(\sqrt{x}-2\right)\left(\sqrt{x}+1\right)}\,dx = 4\ln\left|\sqrt{x}-2\right|+2\ln\left(\sqrt{x}+1\right)+C$



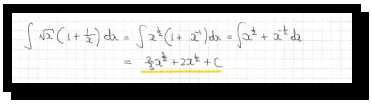
232. $\displaystyle\int \frac{1}{\left(\sqrt{x}-2\right)\left(\sqrt{x}+2\right)}\,dx = \ln\left|x-4\right|+C$



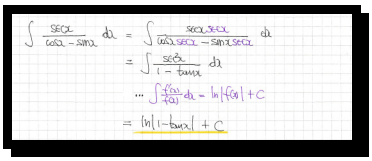
233. $\displaystyle\int \frac{4-3x}{2x+1}\,dx = \frac{11}{4}\ln\left|2x+1\right|-\frac{3}{2}x+C$



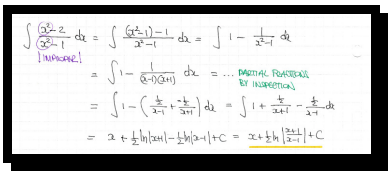
234. $\displaystyle\int \left(1+\frac{1}{x}\right)\sqrt{x}\ dx = \frac{2}{3}x^{\frac{3}{2}} + 2x^{\frac{1}{2}} + C$



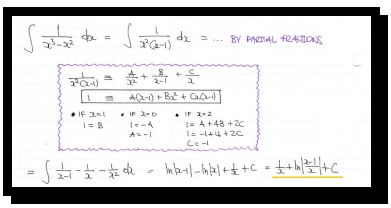
235. $\displaystyle\int \frac{\sec x}{\cos x - \sin x}\ dx = \ln\left|1-\tan x\right| + C$



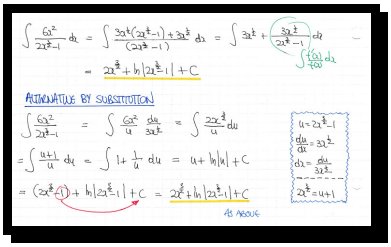
236. $\displaystyle\int \frac{x^2-2}{x^2-1}\ dx = x + \frac{1}{2}\ln\left|\frac{x+1}{x-1}\right| + C$



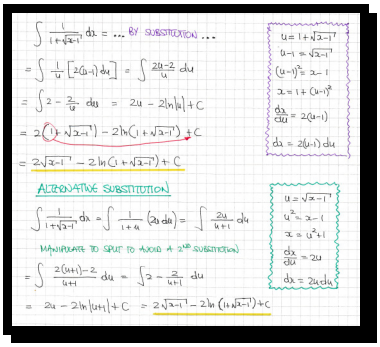
237. $\displaystyle\int \frac{1}{x^3-x^2}\ dx = \frac{1}{x} + \ln\left|\frac{x-1}{x}\right| + C$



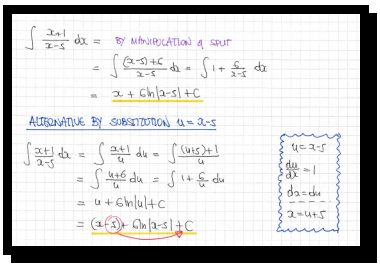
238. $$\int \frac{6x^2}{2x^{\frac{3}{2}}-1}\,dx = 2x^{\frac{3}{2}} + \ln\left|2x^{\frac{3}{2}}-1\right| + C$$



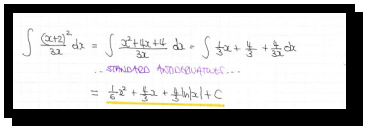
239. $$\int \frac{1}{1+\sqrt{x-1}}\,dx = 2\sqrt{x-1} - 2\ln\left(1+\sqrt{x-1}\right) + C$$



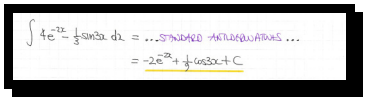
240. $$\int \frac{x+1}{x-5}\,dx = x + 6\ln|x-5| + C$$



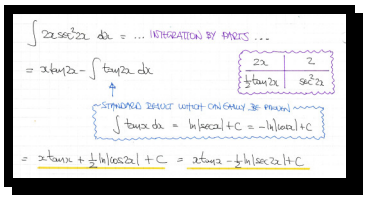
241. $$\int \frac{(x+2)^2}{3x}\,dx=\frac{1}{6}x^2+\frac{4}{3}x+\frac{4}{3}\ln|x|+C$$



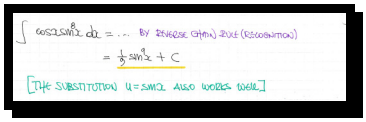
242. $$\int 4\mathrm{e}^{-2x}-\frac{1}{3}\sin 3x\,\,dx=-2\mathrm{e}^{-2x}+\frac{1}{9}\cos 3x+C$$



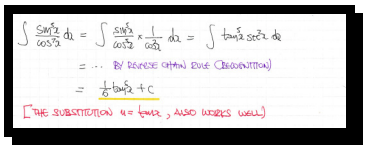
243. $$\int 2x\sec^2 2x\,\,dx=\begin{bmatrix} x\tan x+\frac{1}{2}\ln|\cos 2x|+C \\ x\tan x-\frac{1}{2}\ln|\sec 2x|+C \end{bmatrix}$$



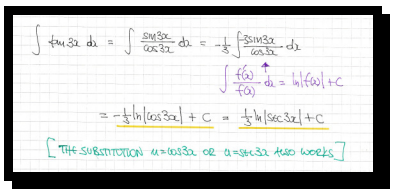
244. $$\int \cos x\sin^8 x\,\,dx=\frac{1}{9}\sin^9 x+C$$



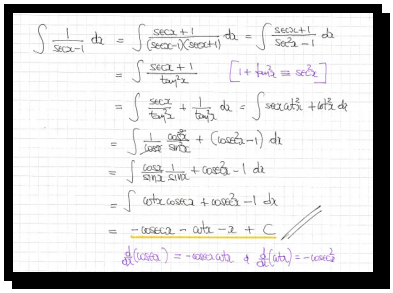
245. $\displaystyle\int \frac{\sin^5 x}{\cos^7 x}\,dx = \frac{1}{6}\tan^6 x + C$



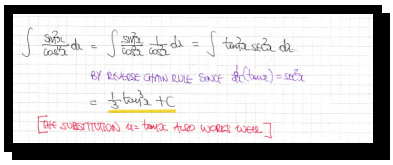
246. $\displaystyle\int \tan 3x\ dx = \begin{bmatrix} \frac{1}{3}\ln|\sec x| + C \\ -\frac{1}{3}\ln|\cos x| + C \end{bmatrix}$



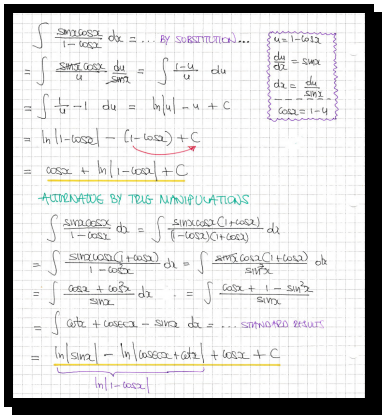
247. $\displaystyle\int \frac{1}{\sec x - 1}\,dx = -x - \cot x - \operatorname{cosec} x + C$



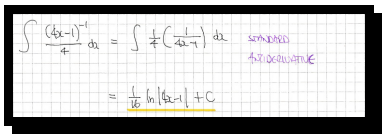
248. $\displaystyle\int \frac{\sin^2 x}{\cos^4 x}\,dx = \frac{1}{3}\tan^3 x + C$



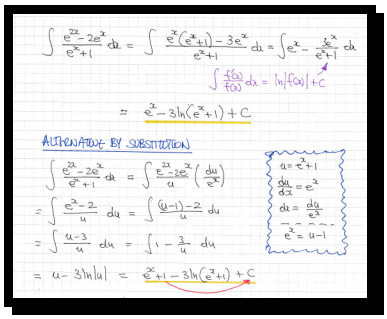
249. $\displaystyle\int \frac{\sin x\cos x}{1-\cos x}\,dx = \begin{bmatrix} \cos x+\ln\left|1-\cos x\right|+C \\ \cos x-\ln\left|\cot x+\operatorname{cosec} x\right|+C \end{bmatrix}$



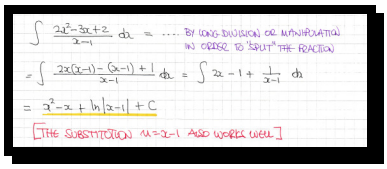
250. $\displaystyle\int \frac{(4x-1)^{-1}}{4}\,dx = -\frac{1}{16}\ln\left|4x-1\right|+C$



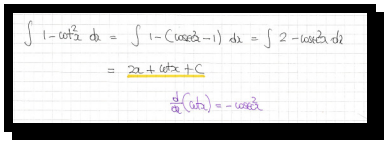
251. $\displaystyle\int \frac{\mathrm{e}^{2x}-2\mathrm{e}^{x}}{\mathrm{e}^{x}+1}\,dx = \mathrm{e}^{x}-3\ln\left(\mathrm{e}^{x}+1\right)+C$



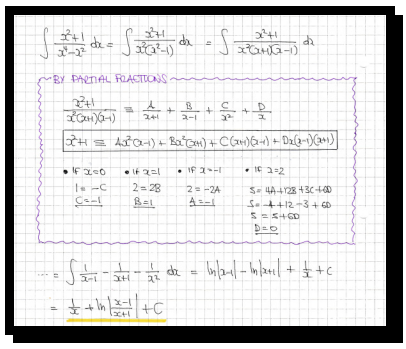
252. $\displaystyle\int \frac{2x^2-3x+2}{x-1}\,dx = x^2-x+\ln|x-1|+C$



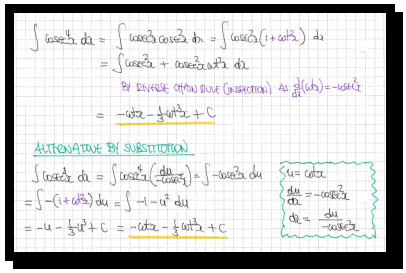
253. $\displaystyle\int 1-\cot^2 x\;\,dx = 2x+\cot x+C$



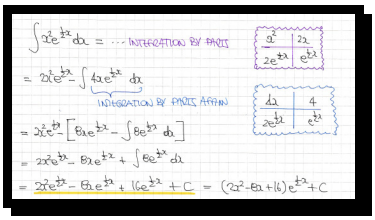
254. $\displaystyle\int \frac{x^2+1}{x^4-x^2}\,dx = \frac{1}{x}+\ln\left|\frac{x-1}{x+1}\right|+C$



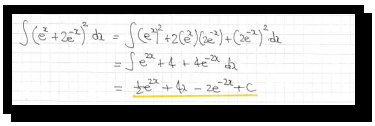
255. $\displaystyle\int \operatorname{cosec}^4 x \ dx = -\cot x - \frac{1}{3}\cot^3 x + C$



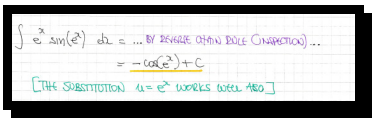
256. $\displaystyle\int x^2 \mathrm{e}^{\frac{1}{2}x} \ dx = 2x^2 \mathrm{e}^{\frac{1}{2}x} - 8x\mathrm{e}^{\frac{1}{2}x} + 16\mathrm{e}^{\frac{1}{2}x} + C$



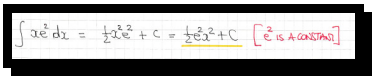
257. $\displaystyle\int \left(\mathrm{e}^x + 2\mathrm{e}^{-x}\right)^2 \ dx = \frac{1}{2}\mathrm{e}^{2x} + 4x - 2\mathrm{e}^{-2x} + C$



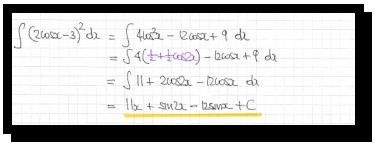
258. $\displaystyle\int \mathrm{e}^x \sin\left(\mathrm{e}^x\right) \ dx = -\cos\left(\mathrm{e}^x\right) + C$



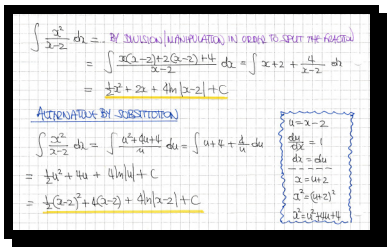
259. $\displaystyle\int x\mathrm{e}^2\ dx=\frac{1}{2}\mathrm{e}^2x^2+C$



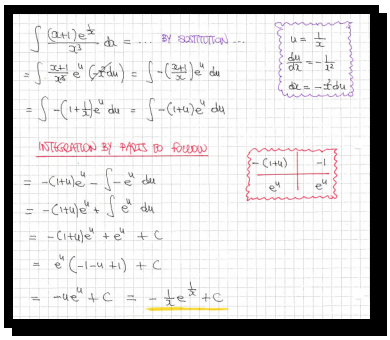
260. $\displaystyle\int \left(2\cos x-3\right)^2\ dx=11x+\sin 2x-12\sin x+C$



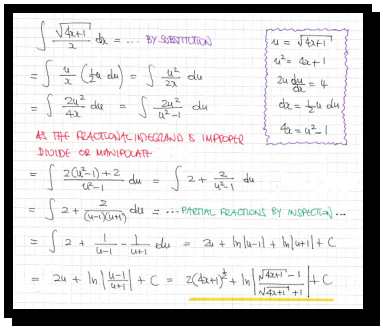
261. $\displaystyle\int \frac{x^2}{x-2}\ dx=\begin{bmatrix}\frac{1}{2}x^2+2x+4\ln\left|x-2\right|+C\\ \frac{1}{2}\left(x-2\right)^2+4\left(x-2\right)+4\ln\left|x-2\right|+C\end{bmatrix}$



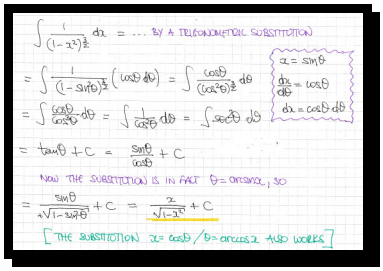
262. $\displaystyle\int \frac{\left(x+1\right)\mathrm{e}^{\frac{1}{x}}}{x^3}\ dx=-\frac{1}{x}\mathrm{e}^{\frac{1}{x}}+C$



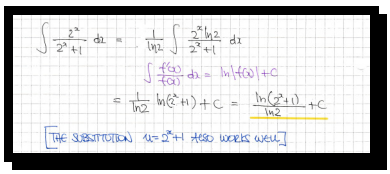
263. $$\int \frac{\sqrt{4x+1}}{x}\,dx = 2(4x-1)^{\frac{1}{2}} + \ln\left|\frac{\sqrt{4x+1}-1}{\sqrt{4x+1}+1}\right| + C$$



264. $$\int \frac{1}{\left(1-x^2\right)^{\frac{3}{2}}}\,dx = \frac{x}{\sqrt{1-x^2}} + C$$



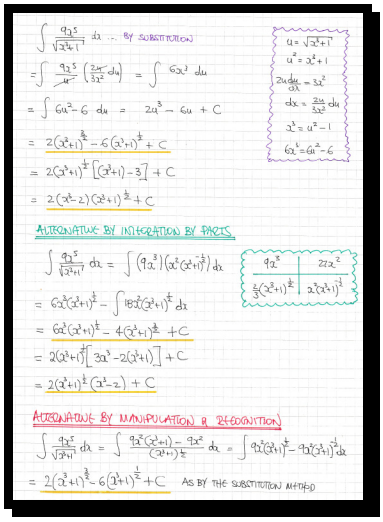
265. $$\int \frac{2^x}{2^x+1}\,dx = \frac{\ln\left(2^x+1\right)}{\ln 2} + C$$



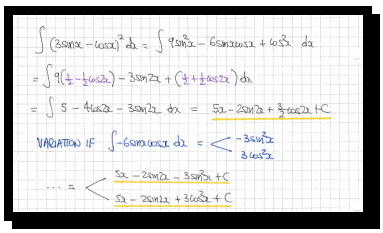
266. $\displaystyle\int (2x-1)\sqrt{2x-3}\ dx = \begin{bmatrix} \frac{1}{5}(2x-3)^{\frac{5}{2}}+\frac{2}{3}(2x-3)^{\frac{3}{2}}+C \\ \frac{1}{3}(2x-1)(2x-3)^{\frac{3}{2}}-\frac{2}{15}(2x-3)^{\frac{5}{2}}+C \end{bmatrix}$



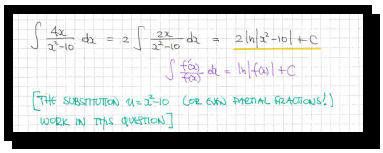
267. $\displaystyle\int \frac{9x^5}{\sqrt{x^3+1}}\ dx = \begin{bmatrix} 2\left(x^3+1\right)^{\frac{3}{2}}-6\left(x^3+1\right)^{\frac{1}{2}}+C \\ 2x^3\left(x^3+1\right)^{\frac{1}{2}}-4\left(x^3+1\right)^{\frac{3}{2}}+C \\ 2\left(x^3-2\right)\left(x^3+1\right)^{\frac{1}{2}}+C \end{bmatrix}$



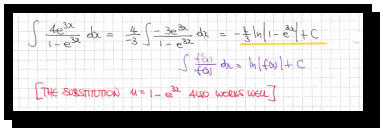
268. $\displaystyle\int (3\sin x-\cos x)^2\ dx=\begin{bmatrix} 5x-\sin 2x+\frac{3}{2}\cos 2x+C \\ 5x-\sin 2x-3\sin^2 x+C \\ 5x-\sin 2x+3\cos^2 x+C \end{bmatrix}$



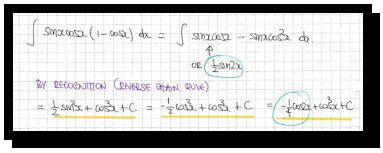
269. $\displaystyle\int \frac{4x}{x^2-10}\ dx=2\ln\left|x^2-10\right|+C$



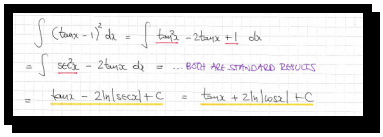
270. $\displaystyle\int \frac{4e^{3x}}{1-e^{3x}}\ dx=-\frac{4}{3}\ln\left|1-e^{3x}\right|+C$



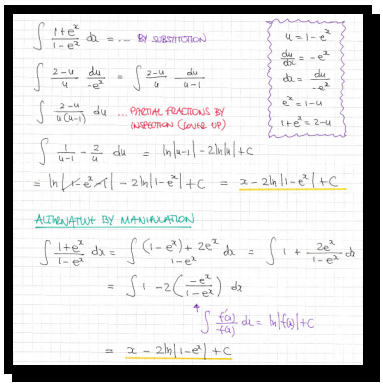
271. $\displaystyle\int (1-\cos x)\sin x\cos x\ dx=\begin{bmatrix} \cos^3 x-\frac{1}{4}\cos 2x+C \\ \cos^3 x-\frac{1}{2}\cos^2 x+C \\ \cos^3 x+\frac{1}{2}\sin^2 x+C \end{bmatrix}$



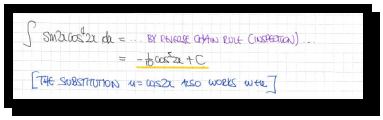
272. $\displaystyle\int (\tan x-1)^2\ dx=\begin{bmatrix}\tan x-2\ln|\sec x|+C\\ \tan x+2\ln|\cos x|+C\end{bmatrix}$



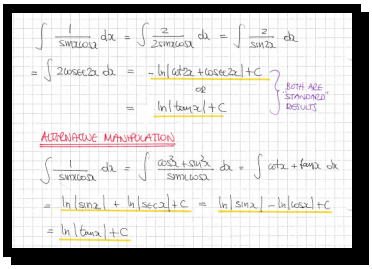
273. $\displaystyle\int \frac{1+\mathrm{e}^x}{1-\mathrm{e}^x}\ dx=x-2\ln\left|1-\mathrm{e}^x\right|+C$



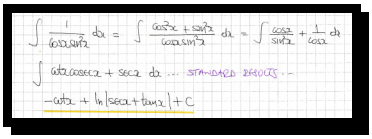
274. $\displaystyle\int \sin 2x\cos^4 2x\ dx=-\frac{1}{10}\cos^5 2x+C$



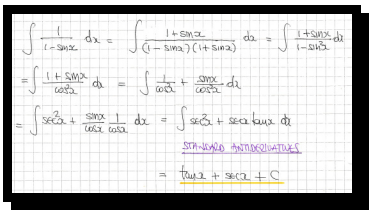
275. $$\int \frac{1}{\sin x \cos x}\, dx = \begin{bmatrix} \ln|\sin x| - \ln|\sec x| + C \\ \ln|\sin x| + \ln|\cos x| + C \\ \ln|\tan x| + C \\ -\ln|\cot 2x + \operatorname{cosec} 2x| + C \end{bmatrix}$$



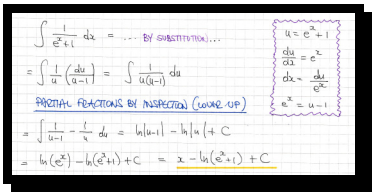
276. $$\int \frac{1}{\sin^2 x \cos x}\, dx = -\cot x + \ln|\sec x + \tan x| + C$$



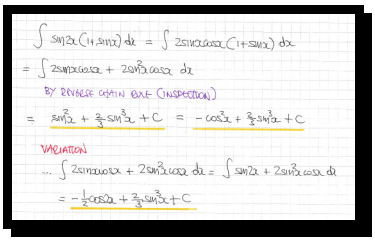
277. $$\int \frac{1}{1-\sin x}\, dx = \tan x + \sec x + C$$



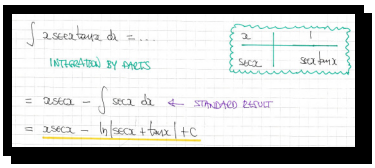
278. $\displaystyle\int \frac{1}{\mathrm{e}^x+1}\,dx = x-\ln\left(\mathrm{e}^x+1\right)+C$



279. $\displaystyle\int (1+\sin x)\sin 2x\ dx = \begin{bmatrix} \frac{2}{3}\sin^3 x-\cos^2 x+C \\ \frac{2}{3}\sin^3 x+\sin^2 x+C \\ \frac{2}{3}\sin^3 x-\frac{1}{2}\cos 2x+C \end{bmatrix}$



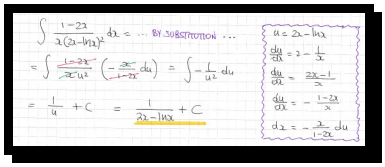
280. $\displaystyle\int x\sec x\tan x\ dx = x\sec x-\ln\left|\sec x+\tan x\right|+C$



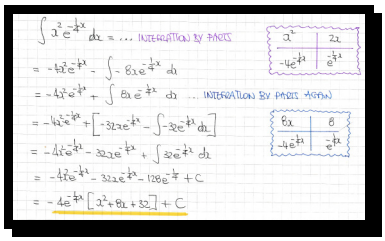
281. $\displaystyle\int \sin 3x\cos 2x\ dx = \begin{bmatrix} -\frac{1}{10}\cos 5x-\frac{1}{2}\cos x+C \\ \frac{2}{13}\sin 3x\sin 2x+\frac{3}{13}\cos 3x\cos 2x+C \end{bmatrix}$



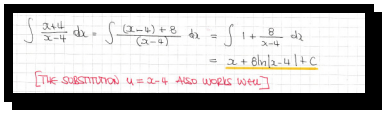
282. $\displaystyle\int \frac{1-2x}{x\left(2x-\ln x\right)^2}\ dx = \frac{1}{2x-\ln x}+C$



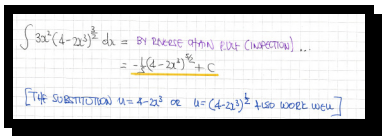
283. $\displaystyle\int x^2\,\mathrm{e}^{-\frac{1}{4}x}\ dx = -4\mathrm{e}^{-\frac{1}{4}x}\left[x^2+8x+32\right]+C$



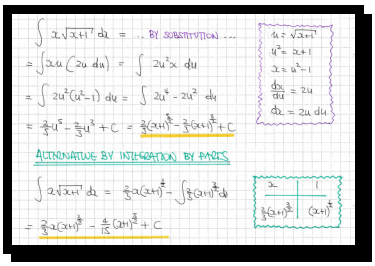
284. $\displaystyle\int \frac{x+4}{x-4}\,dx = x+8\ln|x-4|+C$



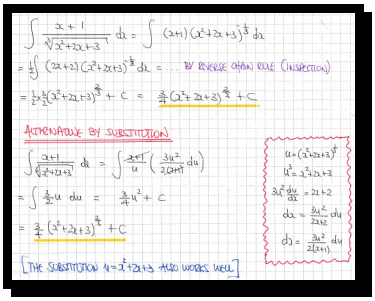
285. $\displaystyle\int 3x^2\left(4-2x^3\right)^{\frac{3}{2}}\,dx = -\frac{1}{5}\left(4-2x^3\right)^{\frac{5}{2}}+C$



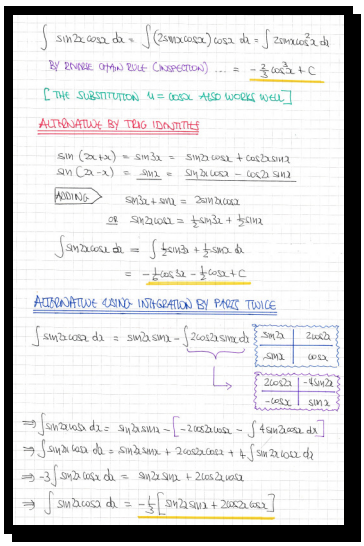
286. $\displaystyle\int x\sqrt{x+1}\,dx = \begin{bmatrix} \frac{2}{5}(x+1)^{\frac{5}{2}}-\frac{2}{3}(x+1)^{\frac{3}{2}}+C \\ \frac{2}{3}x(x+1)^{\frac{3}{2}}-\frac{4}{15}(x+1)^{\frac{5}{2}}+C \end{bmatrix}$



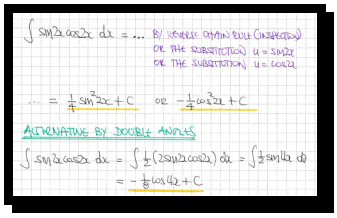
287. $\displaystyle\int \frac{x+1}{\sqrt[3]{x^2+2x+3}}\,dx = \frac{3}{4}\left(x^2+2x+3\right)^{\frac{2}{3}}+C$



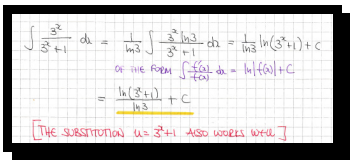
288. $\displaystyle\int \sin 2x\cos x\ dx = \begin{bmatrix} -\frac{2}{3}\cos^3 x + C \\ -\frac{1}{6}\cos 3x - \frac{1}{2}\cos x + C \\ -\frac{1}{3}\left(\sin 2x\sin x + 2\cos 2x\cos x\right) + C \end{bmatrix}$



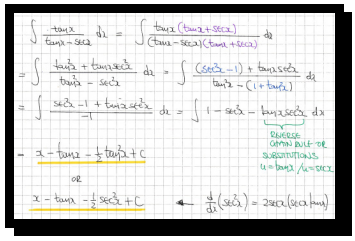
289. $\displaystyle\int \sin 2x\cos 2x\ dx = \begin{bmatrix} \frac{1}{4}\sin^2 2x + C \\ -\frac{1}{4}\cos^2 2x + C \\ -\frac{1}{8}\cos 4x + C \end{bmatrix}$



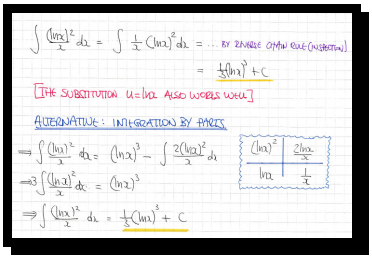
290. $\displaystyle\int \frac{3^x}{3^x+1}\ dx = \frac{\ln\left(3^x+1\right)}{\ln 3} + C$



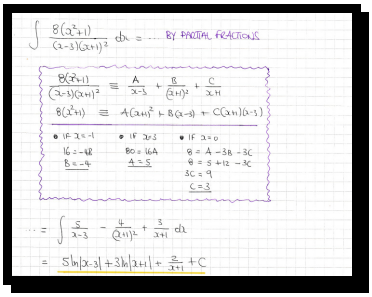
291. $$\int \frac{\tan x}{\tan x-\sec x}\,dx=\begin{bmatrix} x-\tan x-\frac{1}{2}\tan^2 x+C \\ x-\tan x-\frac{1}{2}\sec^2 x+C \end{bmatrix}$$



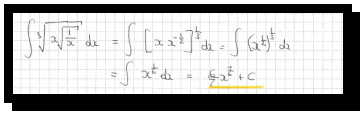
292. $$\int \frac{(\ln x)^2}{x}\,dx=\frac{1}{3}(\ln x)^3+C$$



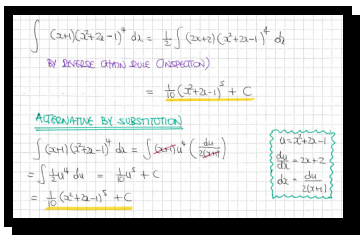
293. $$\int \frac{8\left(x^2+1\right)}{(x-3)(x+1)^2}\,dx=5\ln|x-3|+3\ln|x+1|+\frac{2}{x+1}+C$$



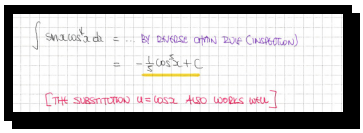
294. $\displaystyle\int \sqrt[3]{x\sqrt{\frac{1}{x}}}\ dx = \frac{6}{7}x^{\frac{7}{6}} + C$



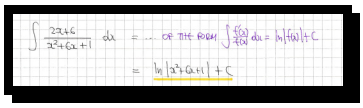
295. $\displaystyle\int (x+1)\left(x^2+2x-1\right)^4\ dx = \frac{1}{10}\left(x^2+2x-1\right)^5 + C$



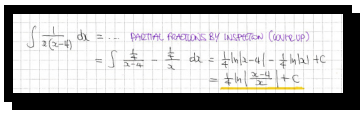
296. $\displaystyle\int \sin x\cos^4 x\ dx = -\frac{1}{5}\cos^5 x + C$



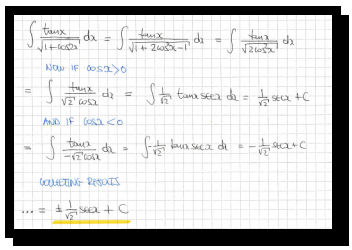
297. $\displaystyle\int \frac{2x+6}{x^2+6x+1}\ dx = \ln\left|x^2+6x+1\right| + C$



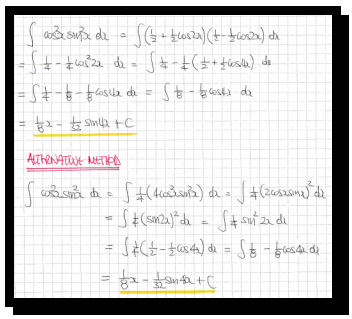
298. $\displaystyle\int \frac{1}{x(x-4)}\,dx=\frac{1}{4}\ln\left|\frac{x-4}{x}\right|+C$



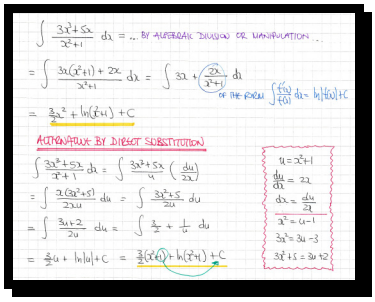
299. $\displaystyle\int \frac{\tan x}{\sqrt{1+\cos 2x}}\,dx=\pm\frac{1}{\sqrt{2}}\sec x+C$



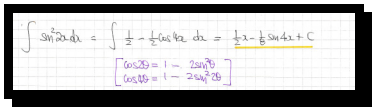
300. $\displaystyle\int \cos^2 x\sin^2 x\;dx=\frac{1}{8}x-\frac{1}{32}\sin 4x+C$



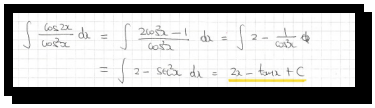
301. $\displaystyle\int \frac{3x^3+5x}{x^2+1}\,dx=\frac{3}{2}x^2+\ln\left(x^2+1\right)+C$



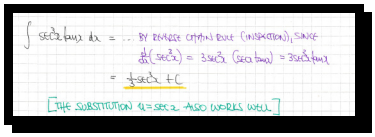
302. $\displaystyle\int \sin^2 2x\;dx=\frac{1}{2}x-\frac{1}{8}\sin 4x+C$



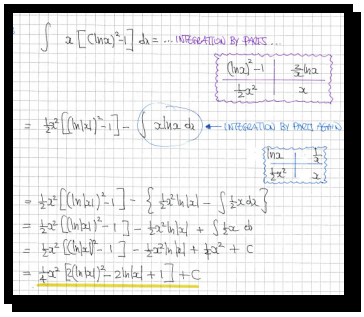
303. $\displaystyle\int \frac{\cos 2x}{\cos^2 x}\,dx=2x-\tan x+C$



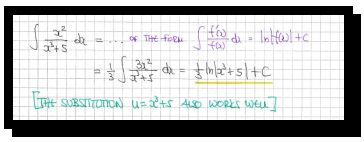
304. $\displaystyle\int \sec^3 x\tan x\;dx=\frac{1}{3}\sec^3 x+C$



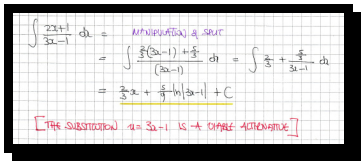
305. $\displaystyle\int x\left[(\ln x)^2-1\right]\,dx=\frac{1}{4}x^2\left[2\left(\ln|x|\right)^2-2\ln|x|+1\right]+C$



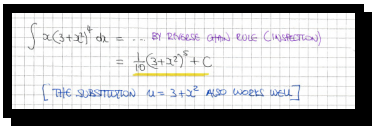
306. $\displaystyle\int \frac{x^2}{x^3+5}\,dx=\frac{1}{3}\ln\left|x^3+5\right|+C$



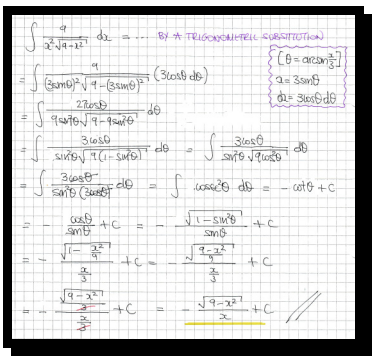
307. $\displaystyle\int \frac{2x+1}{3x-1}\,dx=\frac{2}{3}x+\frac{5}{9}\ln|3x-1|+C$



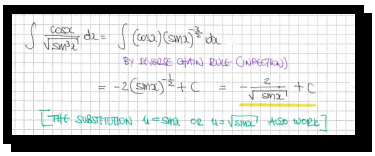
308. $\displaystyle\int x\left(3+x^2\right)^4\,dx=\frac{1}{10}\left(3+x^2\right)^5+C$



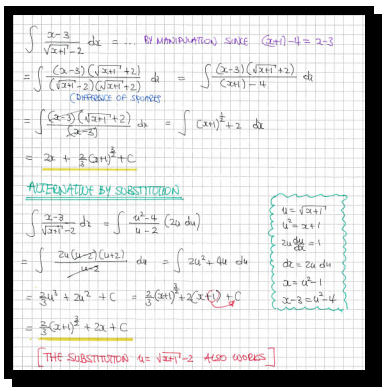
309. $\displaystyle\int \frac{9}{x^2\sqrt{9-x^2}}\,dx = -\frac{\sqrt{9-x^2}}{x} + C$



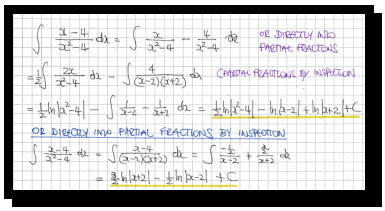
310. $\displaystyle\int \frac{\cos x}{\sqrt{\sin^3 x}}\,dx = -\frac{2}{\sqrt{\sin x}} + C$



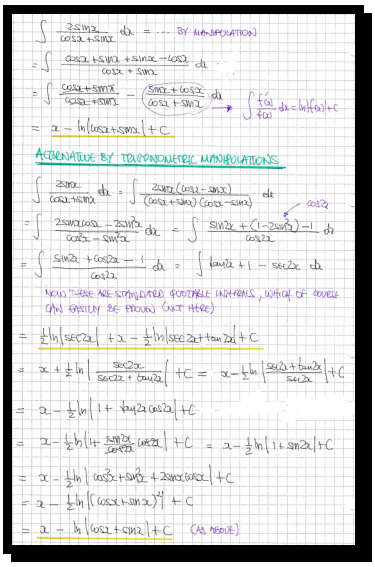
311. $\displaystyle\int \frac{x-3}{\sqrt{x+1}-2}\,dx = 2x + \frac{2}{3}(x+1)^{\frac{3}{2}} + C$



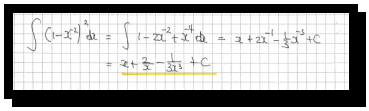
312. $\displaystyle\int \frac{x-4}{x^2-4}\,dx = \begin{bmatrix} \frac{1}{2}\ln\left|x^2-4\right| + \ln\left|\frac{x+2}{x-2}\right| + C \\ \frac{3}{2}\ln|x+2| - \frac{1}{2}\ln|x-2| + C \end{bmatrix}$



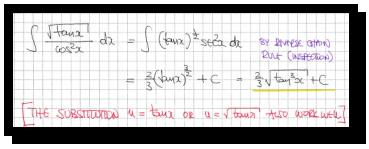
313. $\displaystyle\int \frac{2\sin x}{\cos x+\sin x}\,dx = \begin{bmatrix} x-\ln\left|\cos x+\sin x\right| + C \\ x+\frac{1}{2}\ln\left|\sec 2x\right| - \frac{1}{2}\ln\left|\sec 2x+\tan 2x\right| + C \end{bmatrix}$



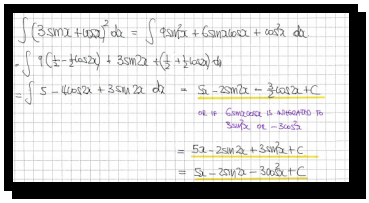
314. $\displaystyle\int \left(1-x^{-2}\right)^2\,dx = 2+\frac{2}{x}-\frac{1}{3x^3}+C$



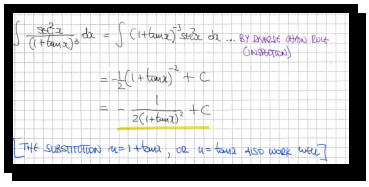
315. $\displaystyle\int \frac{\sqrt{\tan x}}{\cos^2 x}\,dx = \frac{2}{3}\sqrt{\tan^3 x} + C$



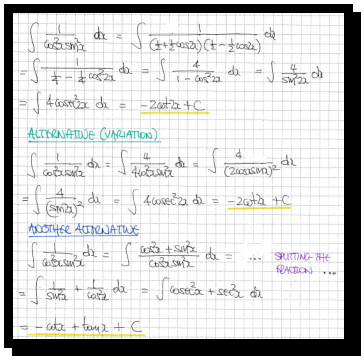
316. $\displaystyle\int \left(3\sin x + \cos x\right)^2\,dx = \begin{bmatrix} 5x - 2\sin 2x - \frac{3}{2}\cos 2x + C \\ 5x - 2\sin 2x + 3\sin^2 x + C \\ 5x - 2\sin 2x - 3\cos^2 x + C \end{bmatrix}$



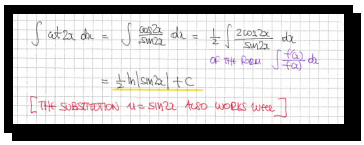
317. $\displaystyle\int \frac{\sec^2 x}{\left(1+\tan x\right)^3}\,dx = -\frac{1}{2\left(1+\tan x\right)^2} + C$



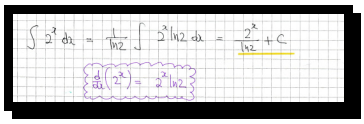
318. $\displaystyle\int \frac{1}{\cos^2 x \sin^2 x}\,dx = \begin{bmatrix} -2\cot 2x + C \\ -\cot x + \tan x + C \end{bmatrix}$



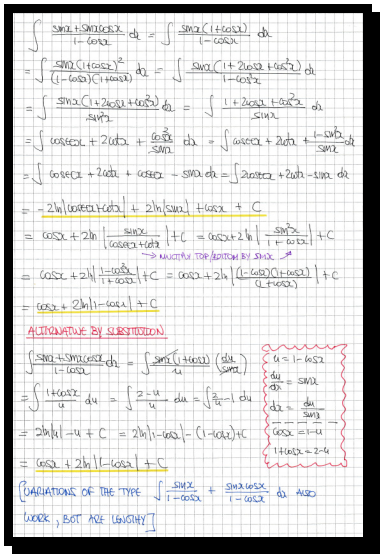
319. $\displaystyle\int \cot 2x\ dx = \frac{1}{2}\ln\left|\sin 2x\right| + C$



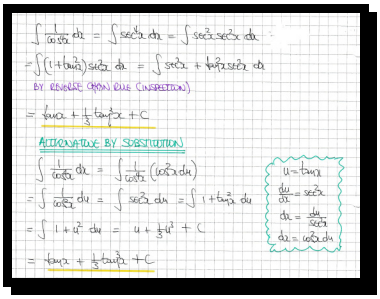
320. $\displaystyle\int 2^x\ dx = \frac{2^x}{\ln 2} + C$



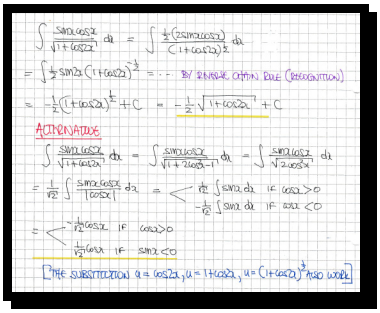
321. $\displaystyle\int \frac{\sin x+\sin x\cos x}{1-\cos x}\,dx=\begin{bmatrix}\cos x+2\ln|1-\cos x|+C\\ \cos x+2\ln|\sin x|-2\ln|\cot x+\operatorname{cosec} x|+C\end{bmatrix}$



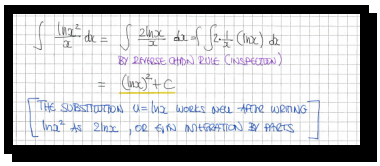
322. $\displaystyle\int \frac{1}{\cos^4 x}\,dx=\tan x+\frac{1}{3}\tan^3 x+C$



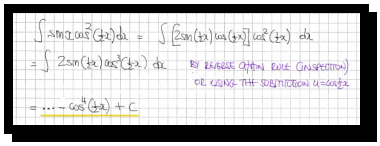
323. $$\int \frac{\sin x\cos x}{\sqrt{1+\cos 2x}}\,dx=\begin{bmatrix} -\frac{1}{2}\sqrt{1+\cos 2x}+C \\ \begin{bmatrix} -\frac{\cos x}{\sqrt{2}}+C & \text{if} & \cos x>0 \\ \frac{\cos x}{\sqrt{2}}+C & \text{if} & \cos x<0 \end{bmatrix} \end{bmatrix}$$



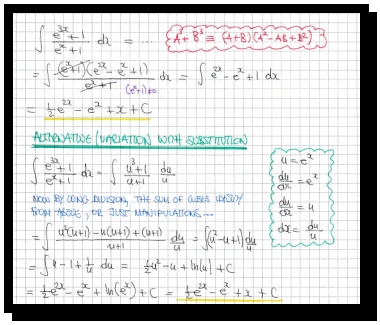
324. $$\int \frac{\ln x^2}{x}\,dx=\left(\ln|x|\right)^2+C$$



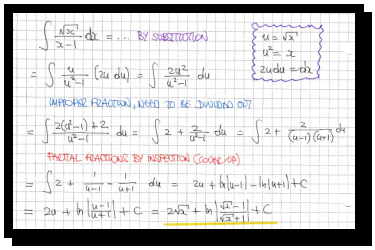
325. $$\int \sin x\cos^2\left(\frac{1}{2}x\right)\,dx=-\cos^4\left(\frac{1}{2}x\right)+C$$



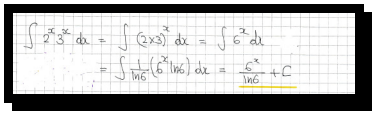
326. $\displaystyle\int \frac{\mathrm{e}^{3x}+1}{\mathrm{e}^{x}+1}\,dx=\frac{1}{2}\mathrm{e}^{2x}-\mathrm{e}^{x}+x+C$



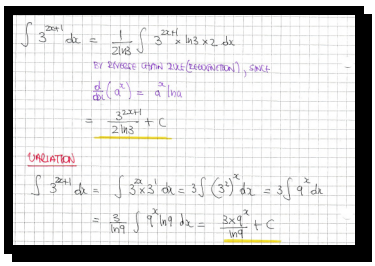
327. $\displaystyle\int \frac{\sqrt{x}}{x-1}\,dx=2\sqrt{x}+\ln\left|\frac{\sqrt{x}-1}{\sqrt{x}+1}\right|+C$



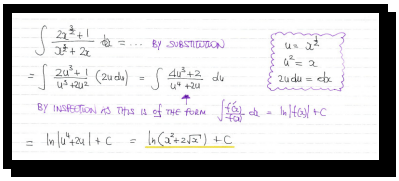
328. $\displaystyle\int 2^{x}\,3^{x}\,dx=\frac{6^{x}}{\ln 6}+C$



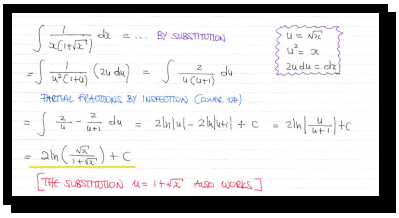
329. $$\int 3^{2x+1}\,dx = \left[\begin{array}{l} \dfrac{3^{2x+1}}{2\ln 3}+C \\ \dfrac{3\times 9^{x}}{\ln 9}+C \end{array}\right]$$



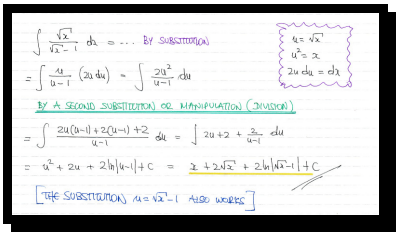
330. $$\int \frac{2x^{\frac{3}{2}}+1}{x^{\frac{5}{2}}+2x}\,dx = \ln\left(x^2+2\sqrt{x}\right)+C$$



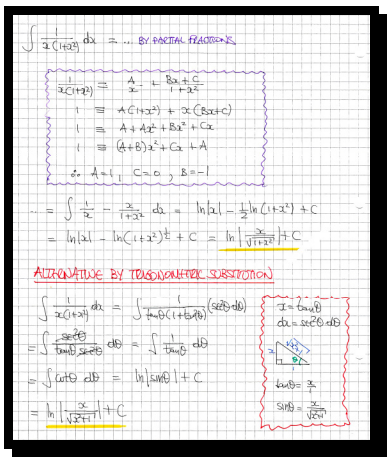
331. $$\int \frac{1}{x\left(1+\sqrt{x}\right)}\,dx = 2\ln\left(\frac{\sqrt{x}}{1+\sqrt{x}}\right)+C$$



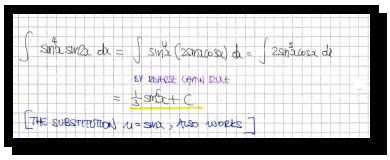
332. $\displaystyle\int \frac{\sqrt{x}}{\sqrt{x}-1}\,dx = x+2\sqrt{x}+2\ln\left|\sqrt{x}-1\right|+C$



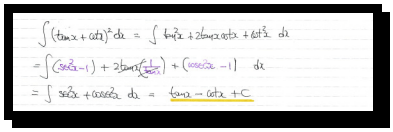
333. $\displaystyle\int \frac{1}{x\left(1+x^2\right)}\,dx = \ln\left|\frac{x}{\sqrt{x^2+1}}\right|+C$



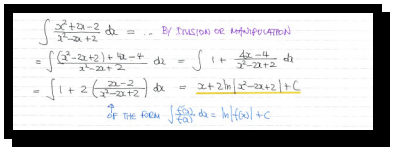
334. $\displaystyle\int \sin^4 x \sin 2x\ dx = \frac{1}{3}\sin^6 x + C$



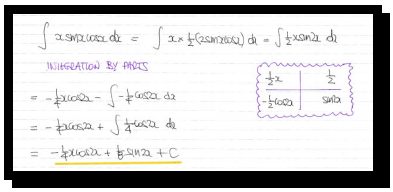
335. $\displaystyle\int (\tan x+\cot x)^2\ dx=\tan x-\cot x+C$



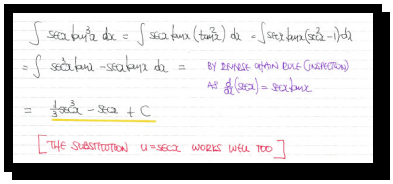
336. $\displaystyle\int \frac{x^2+2x-2}{x^2-2x+2}\ dx=x+\ln\left(x^2-2x+2\right)+C$



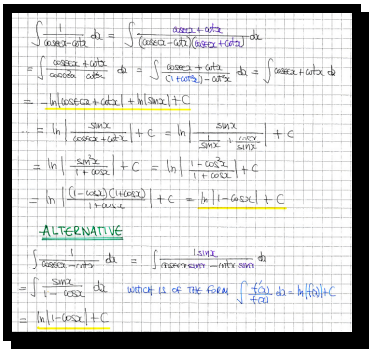
337. $\displaystyle\int x\sin x\cos x\ dx=-\frac{1}{4}x\cos 2x+\frac{1}{8}\sin 2x+C$



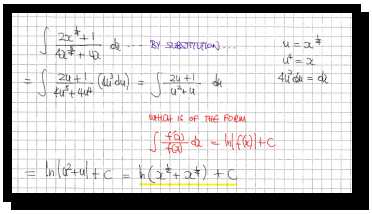
338. $\displaystyle\int \sec x\tan^3 x\ dx=-\frac{1}{3}\sec^3 x-\sec x+C$



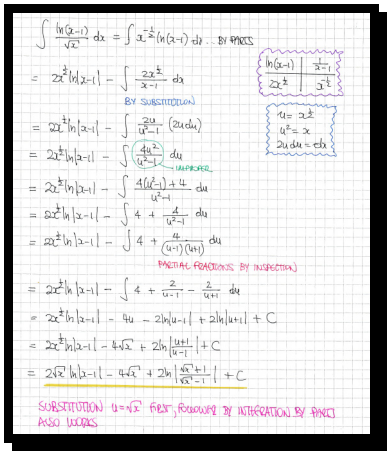
339. $$\int \frac{1}{\operatorname{cosec} x-\cot x}\,dx=\begin{bmatrix}\ln|\sin x|-\ln|\operatorname{cosec} x+\cot x|+C\\ \ln|1-\cos x|+C\end{bmatrix}$$



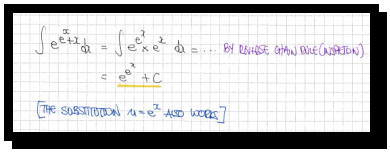
340. $$\int \frac{2x^{\frac{1}{4}}+1}{4x^{\frac{5}{4}}+4x}\,dx=\ln\left(x^{\frac{1}{2}}+x^{\frac{1}{4}}\right)+C$$



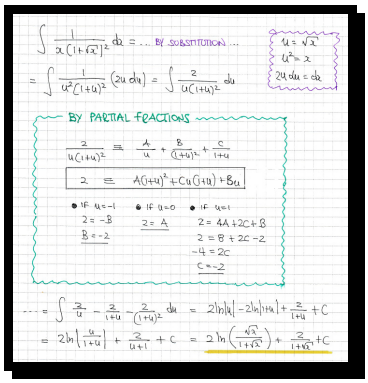
341. $$\int \frac{\ln(x-1)}{\sqrt{x}}\,dx=2\sqrt{x}\ln|x-1|-4\sqrt{x}+2\ln\left|\frac{\sqrt{x}+1}{\sqrt{x}-1}\right|+C$$



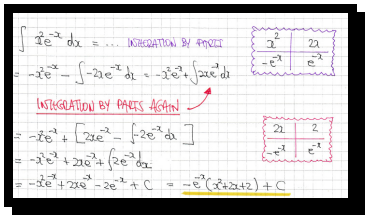
342. $\displaystyle\int e^{x+e^x}\,dx = e^{e^x}+C$



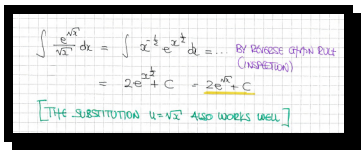
343. $\displaystyle\int \frac{1}{x\left(1+\sqrt{x}\right)^2}\,dx = 2\ln\left[\frac{\sqrt{x}}{1+\sqrt{x}}\right]+\frac{2}{1+\sqrt{x}}+C$



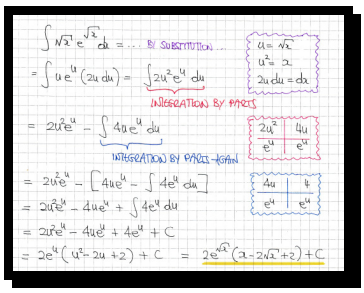
344. $\displaystyle\int x^2 e^{-x}\,dx = -e^{-x}\left(x^2+2x+2\right)+C$



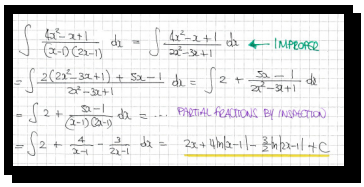
345. $\displaystyle\int \frac{\mathrm{e}^{\sqrt{x}}}{\sqrt{x}}\,dx = 2\mathrm{e}^{\sqrt{x}} + C$



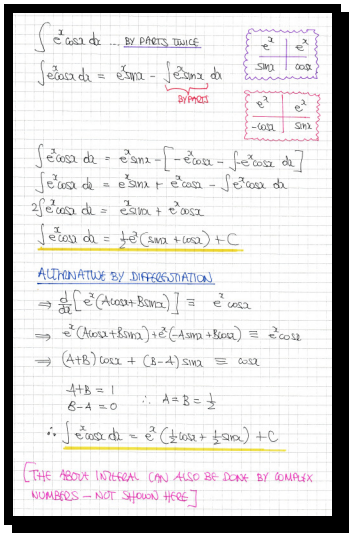
346. $\displaystyle\int \sqrt{x}\,\mathrm{e}^{\sqrt{x}}\,dx = 2\mathrm{e}^{\sqrt{x}}\left(x+2\sqrt{x}+2\right) + C$



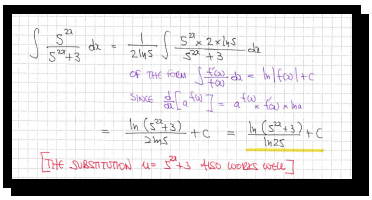
347. $\displaystyle\int \frac{4x^2-x+1}{(x-1)(2x-1)}\,dx = 2x+4\ln|x-1|-\frac{3}{2}\ln|2x-1| + C$



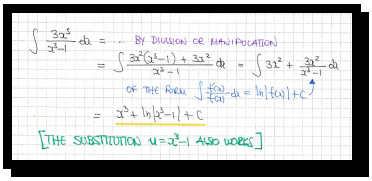
348. $\displaystyle\int \mathrm{e}^{x}\cos x\ dx=\frac{1}{2}\mathrm{e}^{-x}\left(\sin x+\cos x\right)+C$



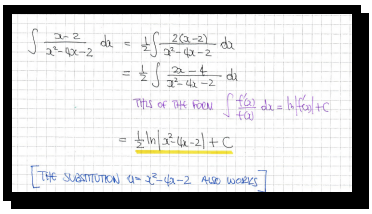
349. $\displaystyle\int \frac{5^{2x}}{5^{2x}+3}\ dx=\frac{\ln\left(5^{2x}+3\right)}{\ln 25}+C$



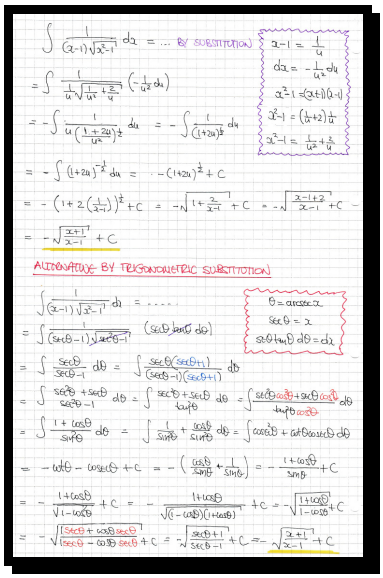
350. $\displaystyle\int \frac{3x^{5}}{x^{3}-1}\ dx=x^{3}+\ln\left|x^{3}-1\right|+C$



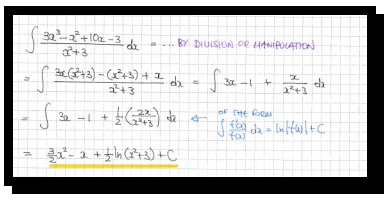
351. $\displaystyle\int \frac{x-2}{x^2-4x-2}\,dx=\frac{1}{2}\ln\left|x^2-4x-2\right|+C$



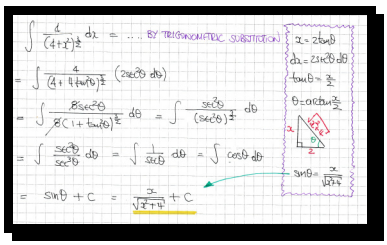
352. $\displaystyle\int \frac{1}{(x-1)\sqrt{x^2-1}}\,dx=-\sqrt{\frac{x+1}{x-1}}+C$



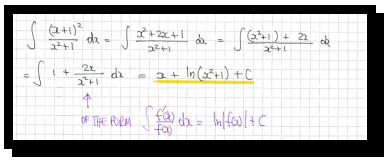
353. $\displaystyle\int \frac{3x^3-x^2+10x-3}{x^2+3}\,dx=\frac{3}{2}x^2-x+\frac{1}{2}\ln\left(x^2+3\right)+C$



354. $$\int \frac{4}{\left(4+x^2\right)^{\frac{3}{2}}}\,dx=\frac{x}{\sqrt{4+x^2}}+C$$



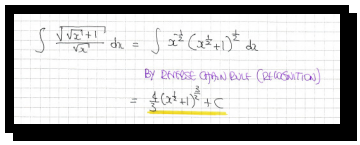
355. $$\int \frac{\left(x+1\right)^2}{x^2+1}\,dx=x+\ln\left(x^2+1\right)+C$$



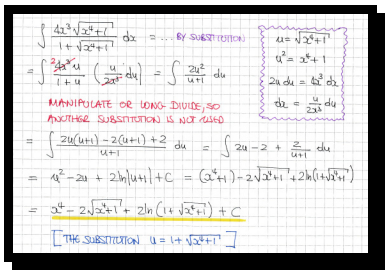
356. $$\int \frac{\cos x+\tan x}{1+\tan^2 x}\,dx=\sin x-\frac{1}{3}\sin^3 x+\frac{1}{2}\sin^2 x+C$$



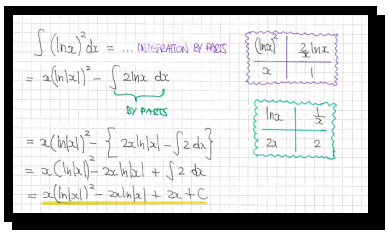
357. $$\int \frac{\sqrt{1+\sqrt{x}}}{\sqrt{x}}\,dx=\frac{4}{3}\left(1+\sqrt{x}\right)^{\frac{3}{2}}+C$$



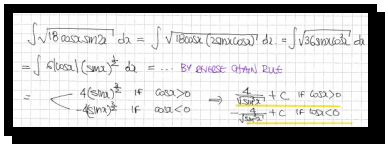
358. $$\int \frac{4x^3\sqrt{x^4+1}}{1+\sqrt{x^4+1}}\,dx=x^4-2\sqrt{x^4+1}+2\ln\left(1+\sqrt{x^4+1}\right)+C$$



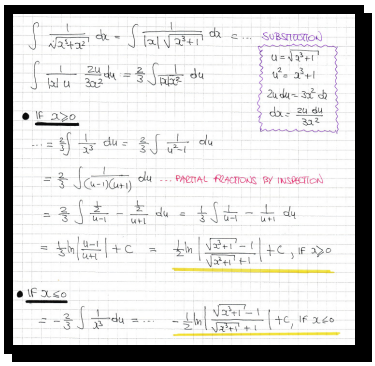
359. $$\int (\ln x)^2\,dx=2x+x\left(\ln|x|\right)^2-2x\ln|x|+C$$



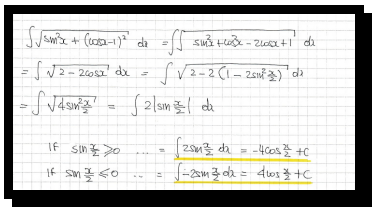
360. $$\int \sqrt{18\cos x \sin 2x}\ dx = \begin{cases} \dfrac{4}{\sqrt{\sin^3 x}} + C & \text{if } \cos x > 0 \\ -\dfrac{4}{\sqrt{\sin^3 x}} + C & \text{if } \cos x > 0 \end{cases}$$



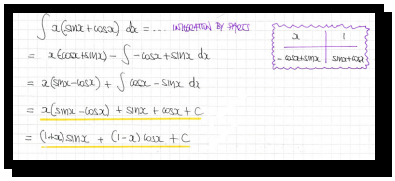
361. $$\int \frac{1}{\sqrt{x^5 + x^2}}\ dx = \begin{cases} \dfrac{1}{2}\ln\left|\dfrac{\sqrt{x^3+1}-1}{\sqrt{x^3+1}+1}\right| + C & \text{if } x > 0 \\ -\dfrac{1}{2}\ln\left|\dfrac{\sqrt{x^3+1}-1}{\sqrt{x^3+1}+1}\right| + C & \text{if } x < 0 \end{cases}$$



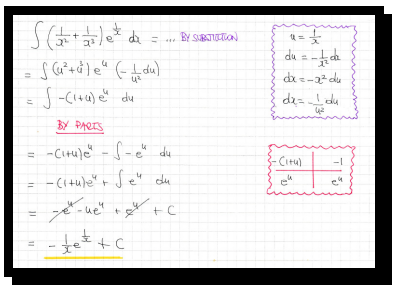
362. $$\int \sqrt{\sin^2 x + (\cos x - 1)^2}\ dx = \begin{cases} 4\cos\left(\frac{1}{2}x\right) + C & \text{if } \sin\left(\frac{1}{2}x\right) < 0 \\ -4\cos\left(\frac{1}{2}x\right) + C & \text{if } \sin\left(\frac{1}{2}x\right) > 0 \end{cases}$$



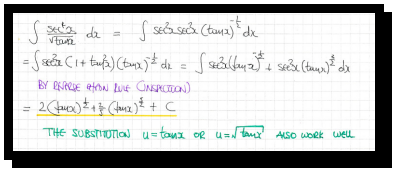
363. $\displaystyle\int x(\sin x+\cos x)\ dx=\begin{bmatrix} x(\sin x-\cos x)+\sin x+\cos x+C \\ (1+x)\sin x+(1-x)\cos x+C \end{bmatrix}$



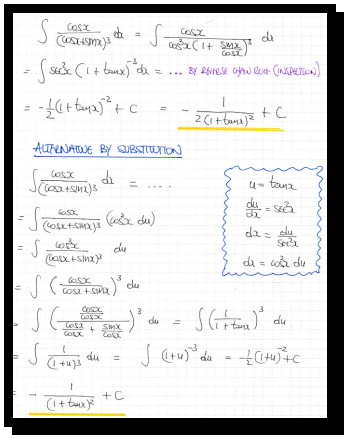
364. $\displaystyle\int \left(\frac{1}{x^2}+\frac{1}{x^3}\right)\mathrm{e}^{\frac{1}{x}}\ dx=-\frac{1}{x}\mathrm{e}^{\frac{1}{x}}+C$



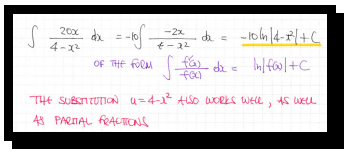
365. $\displaystyle\int \frac{\sec^4 x}{\sqrt{\tan x}}\ dx=2(\tan x)^{\frac{1}{2}}+\frac{2}{5}(\tan x)^{\frac{5}{2}}+C$



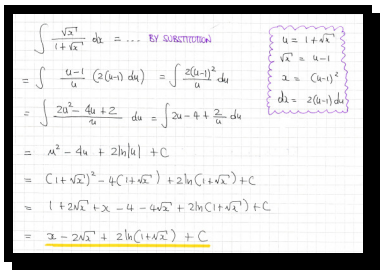
366. $$\int \frac{\cos x}{(\cos x+\sin x)^3}\,dx=-\frac{1}{2(1+\tan x)^2}+C$$



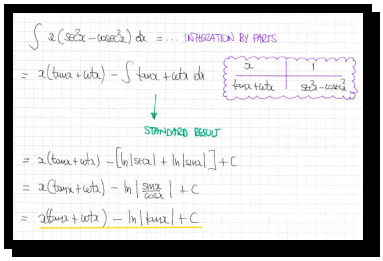
367. $$\int \frac{20x}{4-x^2}\,dx=-10\ln\left|4-x^2\right|+C$$



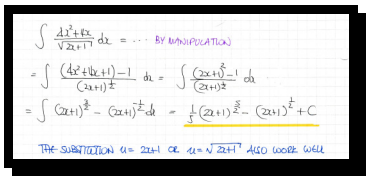
368. $$\int \frac{\sqrt{x}}{1+\sqrt{x}}\,dx=x-2\sqrt{x}+2\ln\left(1+\sqrt{x}\right)+C$$



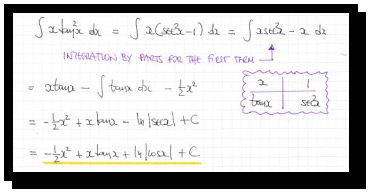
369. $\displaystyle\int x\left(\sec^2 x-\operatorname{cosec}^2 x\right)\,dx=x\left(\tan x+\cot x\right)-\ln\left|\tan x\right|+C$



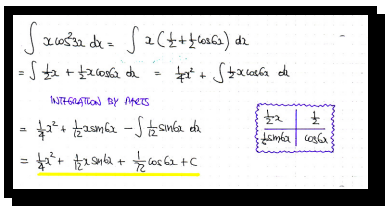
370. $\displaystyle\int \frac{4x^2+4x}{\sqrt{2x+1}}\,dx=\frac{1}{5}(2x+1)^{\frac{5}{2}}-(2x+1)^{\frac{1}{2}}+C$



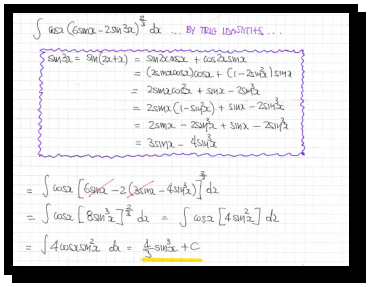
371. $\displaystyle\int x\tan^2 x\,\,dx=-\frac{1}{2}x^2+x\tan x+\ln\left|\cos x\right|+C$



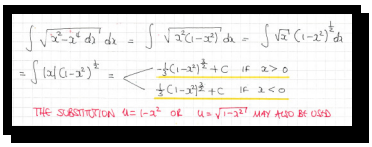
372. $\displaystyle\int x\cos^2 3x\,\,dx=\frac{1}{4}x^2+\frac{1}{12}x\sin 6x+\frac{1}{72}\cos 6x+C$



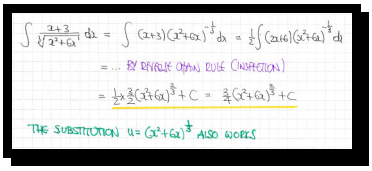
373. $\displaystyle\int \cos x\left(6\sin x-2\sin 3x\right)^{\frac{2}{3}}\,dx=\frac{4}{3}\sin^3 x+C$



374. $\displaystyle\int \sqrt{x^2-x^4}\,dx=\begin{cases}-\frac{1}{3}\left(1-x^2\right)^{\frac{3}{2}}+C & x>0\\ \frac{1}{3}\left(1-x^2\right)^{\frac{3}{2}}+C & x<0\end{cases}$



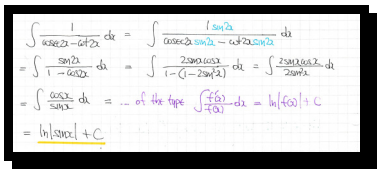
375. $\displaystyle\int \frac{x+3}{\sqrt[3]{x^2+6x}}\,dx=\frac{3}{4}\left(x^2+6x\right)^{\frac{2}{3}}+C$



376. $\displaystyle\int \frac{1-x}{1-\sqrt{x}}\,dx = \begin{bmatrix} -\frac{2}{3}\left(1-\sqrt{x}\right)^3+3\left(1-\sqrt{x}\right)^3-4\left(1-\sqrt{x}\right)+C \\ \frac{2}{3}x^{\frac{3}{2}}+x+C \end{bmatrix}$



377. $\displaystyle\int \frac{1}{\operatorname{cosec} 2x-\cot 2x}\,dx = \ln\left|\sin x\right| + C$



378. $\displaystyle\int \sec^3 x\tan^5 x\;dx = \frac{1}{7}\sec^7 x-\frac{2}{5}\sec^5 x+\frac{1}{3}\sec^3 x + C$



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