QUADRATICS

Question 1

Solve each of the following quadratic equations, by factorization.

a) $x^2 - 11x + 24 = 0$ $\boxed{x = 3, 8}$

b) $x^2 = 6x + 16$ $\boxed{x = -2, 8}$

c) $x^2 + 4x = 12$ $\boxed{x = 2, -6}$

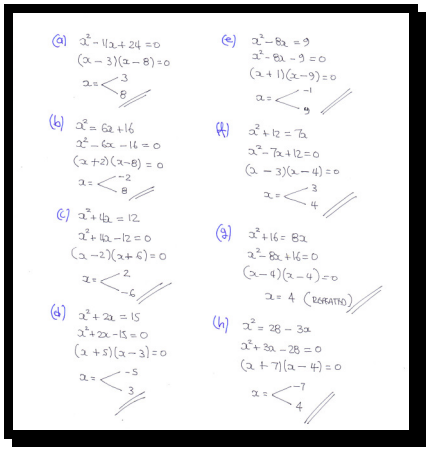
d) $x^2 + 2x = 15$ $\boxed{x = 3, -5}$

e) $x^2 - 8x = 9$ $\boxed{x = -1, 9}$

f) $x^2 + 12 = 7x$ $\boxed{x = 3, 4}$

g) $x^2 + 16 = 8x$ $\boxed{x = 4}$

h) $x^2 = 28 - 3x$ $\boxed{x = -7, 4}$



Question 2

Solve each of the following quadratic equations, by factorization.

a) $x^2 = 2x + 24$ $\boxed{x = -4, 6}$

b) $x^2 + 8x - 10 = 10$ $\boxed{x = -10, 2}$

c) $-x^2 + 11x + 26 = 0$ $\boxed{x = -2, 13}$

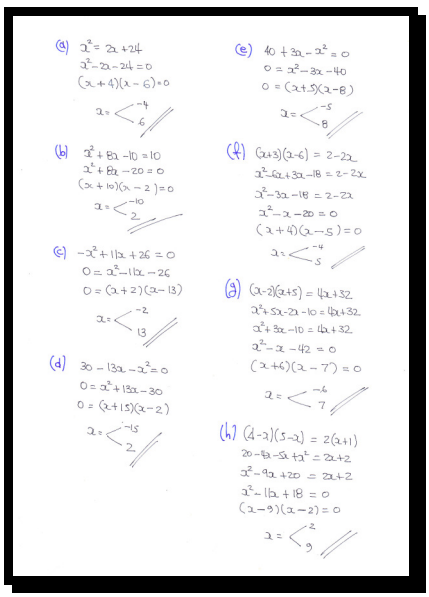
d) $30 - 13x - x^2 = 0$ $\boxed{x = -15, 2}$

e) $40 + 3x - x^2 = 0$ $\boxed{x = -5, 8}$

f) $(x+3)(x-6) = 2 - 2x$ $\boxed{x = -4, 5}$

g) $(x-2)(x+5) = 4x + 32$ $\boxed{x = -6, 7}$

h) $(4-x)(5-x) = 2(x+1)$ $\boxed{x = 2, 9}$



Question 3

Solve each of the following quadratic equations, by factorization.

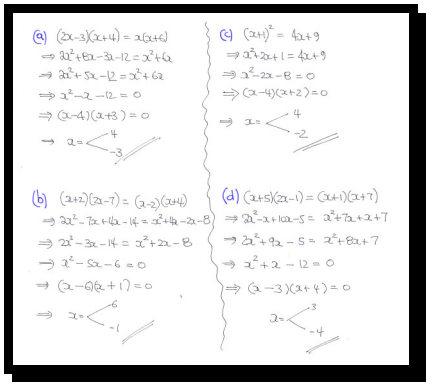
a) $(2x-3)(x+4)=x(x+6)$

b) $(x+2)(2x-7)=(x-2)(x+4)$

c) $(x+1)^2=4x+9$

d) $(x+5)(2x-1)=(x+1)(x+7)$

$\boxed{x=-3,4}$, $\boxed{x=-1,6}$, $\boxed{x=-2,4}$, $\boxed{x=-4,3}$



Question 4

Solve each of the following quadratic equations, by factorization.

a) $x(2x-11)=(x-4)(x+2)$

b) $(2x+3)(x+7)=(x+3)(x+9)$

c) $(2x+1)(x-2)=2(x+5)$

d) $(x-1)(2x+3)=2(x+6)$

$\boxed{x=1,8}$, $\boxed{x=-6,1}$, $\boxed{x=-\frac{3}{2},4}$, $\boxed{x=-\frac{5}{2},3}$

Question 5

Solve each of the following quadratic equations, by factorization.

a) $(2x+3)(4x-5)=(2x+5)(2x-1)$

b) $(3x+2)(6x-7)=(3x-2)(3x+4)$

c) $(3x+8)(6x+5)=(3x+4)(3x+10)$

d) $(x-6)(2x-7)=2(x+1)$

$\boxed{x=-1,\frac{5}{2}}$, $\boxed{x=-\frac{1}{3},2}$, $\boxed{x=-\frac{7}{3},0}$, $\boxed{x=\frac{5}{2},8}$

Question 6

Solve each of the following quadratic equations, by completing the square.

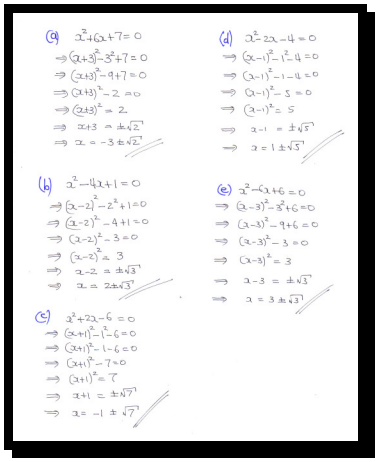
a) $x^2+6x+7=0$ $\boxed{x=-3\pm\sqrt{2}}$

b) $x^2-4x+1=0$ $\boxed{x=2\pm\sqrt{3}}$

c) $x^2+2x-6=0$ $\boxed{x=-1\pm\sqrt{7}}$

d) $x^2-2x-4=0$ $\boxed{x=1\pm\sqrt{5}}$

e) $x^2-6x+6=0$ $\boxed{x=3\pm\sqrt{3}}$



Question 7

Solve each of the following quadratic equations, by completing the square.

a) $x^2+4x-1=0$ $\boxed{x=-2\pm\sqrt{5}}$

b) $x^2-8x+14=0$ $\boxed{x=4\pm\sqrt{2}}$

c) $x^2-2x-1=0$ $\boxed{x=1\pm\sqrt{2}}$

d) $x^2+6x+6=0$ $\boxed{x=-3\pm\sqrt{3}}$

e) $x^2-10x+14=0$ $\boxed{x=5\pm\sqrt{11}}$

Question 8

Solve each of the following quadratic equations, by completing the square.

a) $x^2-6x-1=0$ $\boxed{x=3\pm\sqrt{10}}$

b) $x^2+8x-2=0$ $\boxed{x=-4\pm3\sqrt{2}}$

c) $x^2-8x-2=0$ $\boxed{x=4\pm3\sqrt{2}}$

d) $x^2+6x+4=0$ $\boxed{x=-3\pm\sqrt{5}}$

e) $x^2-4x=14$ $\boxed{x=2\pm3\sqrt{2}}$

Question 9

Solve each of the following quadratic equations, by completing the square.

a) $x^2+10x+5=0$ $\boxed{x=-5\pm 2\sqrt{5}}$

b) $x^2-12x+8=0$ $\boxed{x=6\pm 2\sqrt{7}}$

c) $x^2+8=8x$ $\boxed{x=4\pm 2\sqrt{2}}$

d) $x^2=3-6x$ $\boxed{x=-3\pm 2\sqrt{3}}$

e) $x^2-4x=23$ $\boxed{x=2\pm 3\sqrt{3}}$

Question 10

Solve each of the following quadratic equations, by completing the square.

a) $x^2=4x+8$ $\boxed{x=2\pm 2\sqrt{3}}$

b) $x^2+4x=14$ $\boxed{x=-2\pm 3\sqrt{2}}$

c) $x^2+14x+25=0$ $\boxed{x=-7\pm 2\sqrt{6}}$

d) $x^2+1=14x$ $\boxed{x=7\pm 4\sqrt{3}}$

e) $x^2=18x-33$ $\boxed{x=9\pm 4\sqrt{3}}$