EQUATIONS

Exercise 1: Work out:

a) $x^2 + 4x - 21 = 0$

b) $x^2 - 10x + 25 = 0$

c) $6x^2 + x - 2 = 0$

d) $7x^2 + 9x = 0$

e) $49x^2 - 81 = 0$

Exercise 2: Work out:

a) $(x-6)^2 + 7x = 36$

b) $(5x-3)^2 - 7x = 5(x+5)$

c) $\dfrac{x+3}{x} = \dfrac{3x-1}{x+1}$

d) $\dfrac{(x+6)^2}{x+7} = \dfrac{x+7}{4}$

e) $(x+3)^2 - (2x-5)^2 = 24$

Exercise 3: Work out:

a) $x^4 - 10x^2 + 9 = 0$

b) $x^4 - 20x^2 + 64 = 0$

c) $x^4 - 24x^2 - 25 = 0$

d) $x^4 - 11x^2 + 18 = 0$

e) $x^4 - x^2 - 6 = 0$

Exercise 4: Solve and factorize:

a) $x^3 + 3x^2 - 4x - 12 = 0$

b) $x^3 + 9x^2 + 23x + 15 = 0$

c) $x^4 - 33x^2 + 100x - 84 = 0$

d) $x^6 + 2x^5 - 16x^4 - 32x^3 = 0$

e) $x^5 + 7x^4 + 19x^3 + 25x^2 + 16x + 4 = 0$

f) $x^5 - 24x^3 - 25x = 0$

g) $6x^4 - 13x^3 + 6x^2 + 3x - 2 = 0$

h) $x^6 - 15x^5 + 85x^4 - 225x^3 + 274x^2 - 120x = 0$

i) $x^3 - 4x^2 + 5x - 9 = 0$

Exercise 5: Solve:

a) $\sqrt{2x-1} = 3$

b) $\sqrt{6x+7} = x$

c) $\sqrt{2-7x} = 4$

d) $\sqrt{x^2 - 10x + 30} = 3$

e) $\sqrt{(x+5)^2 - (7x+4)^2} = 5$

f) $\sqrt{2x+5} = 3x-3$

g) $\sqrt{2x-2} + 5 = x$

h) $\sqrt{4-5x} + 7x = -4$

i) $\sqrt{1-8x} - 2x = 11$

j) $\sqrt{x+4} - \sqrt{x-1} = 1$

k) $\sqrt{3x+1} + \sqrt{2x-1} = 3$

l) $\sqrt{4x+1} - \sqrt{x-5} = 4$

m) $\sqrt{2x-1} + \sqrt{x+4} = 6$