Linear Equations

1 Solve the equation $6 - 5x = -14$.

2 Solve the equation $\frac{x-11}{4} = 10$.

(a) Solve the equation $-\frac{2}{9} = \frac{5}{x}$ by first inverting the equation.

(b) Solve the equation $\frac{8}{d} = \frac{-2}{11}$ using the cross-multiplication method.

3 Solve the equation $\frac{4}{x+1} = \frac{3}{7}$.

4 Solve the equation $\frac{2x-1}{3} = -4$.

5 Solve the equation $\frac{-3x+4}{2} = \frac{1}{3}$.

Question 6

Solve the following linear equation $x+7(4-x)=3x+2(x-1)$.

Question 7

An astronomer notices two stars. He observes that one star gives off about 3.6 times as much energy as another star plus 400 units of energy. All together the stars give off 55, 844 units of energy. How many units of energy does each star emit?

Question 8

The swimming pool has a perimeter of 120 metres. If the width is one third of the length, determine the area of the pool.

Question 9

A car rental company charges $40 per day plus $0.25 per kilometre. Another company charges $60 per day but only $0.15 per kilometre. For how many kilometres are the fees of the two companies the same?

Question 10

Solve the equation $4 - 5(x + 3) = 25$.

Question 11

Solve the equation:

$$\frac{2x-7}{3} = = -9$$

Question 12

a. Transpose the formula: $v = u + at$ to make t the subject.

b. If u = 5, a = -2 and v = 0, find the value of t.

Question 13

The volume of a solid is given by: $V = \frac{2}{3}\pi r^3 + \pi r^2 h$

Show that if $h = r$, the formula can be rearranged to make r the subject.

Question 14

The lengths of the sides of a triangle are x, $2x+2$ and 9 centimetres. If the perimeter is 35 cm, what are the lengths of the two unknown sides?