Solving Equations

1) Solve the following equations to find the value of x

a) $x + 5 = 11$ b) $12 = 3x$

c) $x - 2 = 7$ d) $\frac{x}{4} = 9$

e) $-2 = x + 6$ f) $4x = 124$

g) $x - 17 = -3$ h) $2 = \frac{x}{4}$

2) Solve the following equations in x, leave your answer as a fraction

a) $7x = 5$ b) $x - \frac{1}{2} = \frac{2}{3}$

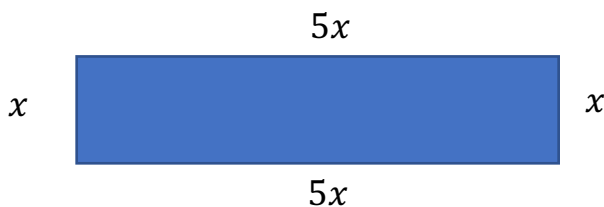c) $\frac{4}{5} + x = 1\frac{1}{3}$ d) $3x = 20$

e) $18 = 7x$ f) $\frac{2}{9} = x - \frac{1}{6}$

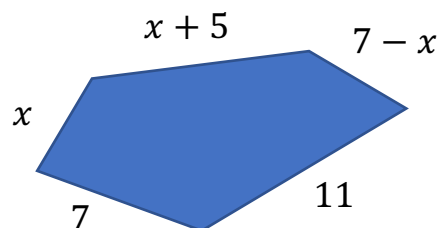For the following questions all lengths are in cm

3a) Find an expression for the perimeter of the shape below

b) Given that the perimeter of the shape above is 42, write down an equation

c) Solve the equation to find x

4a) Find an expression for the perimeter of the shape below

b) Given that the perimeter of the shape above is 42cm, write down an equation

c) Solve the equation to find x

5) Anna, Beth, Clare and Daisy go from smallest height to largest height in that order.

Anna's height is unknown. Beth is 10cm taller than Anna.

Clare's height is the difference between Daisy and Anna's height.

Daisy is 140cm tall.

a) Find an expression for the sum of their heights (call Anna's height x)

b) Given that the sum of their heights is 350cm, write down an equation

c) Solve this equation to find Anna's height

6) Four princes stand in a queue, each one has triple the amount of money as the prince in front of them in the queue.

a) By calling the amount of money the first prince has x, write an expression for the difference in the money carried by the richest and poorest prince.

b) Given that the richest prince has £130 more than the poorest prince, form an equation

c) Solve this equation to find out how much the second richest prince has

Answers

1a) 6 b) 4 c) 9 d) 36 e) -8 f) 31 g) 14 h) 8 2a) $\frac{5}{7}$ b) $1\frac{1}{6}$ c) $\frac{8}{15}$ d) $\frac{20}{3}$ e) $\frac{18}{7}$ f) $\frac{7}{18}$

3a) $12x$ b) $12x = 42$ c) $\frac{7}{2}$ 4a) $30 + x$ b) $30 + x = 42$ c) 12

5a) $290 + x$ b) $290 + x = 350$ c) 60cm 6a) $26x$ b) $26x = 130$ c) £45