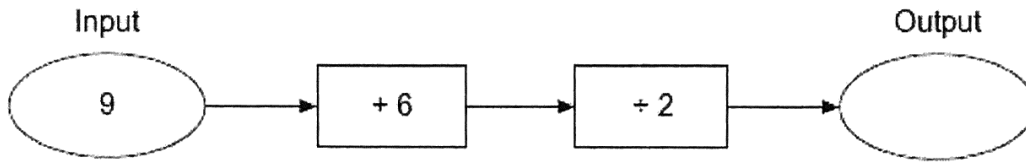


End of Unit Test Name: Answers
Forming and Solving Equations - FOUNDATION



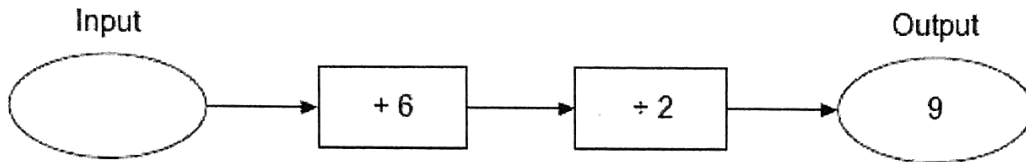
1) (a) Here is a number machine.



Work out the output when the input is 9.

Answer 7.5 (1)

(b) Here is the same number machine.



Work out the input when the output is 9.

Answer 12 (1)

(Total 2 marks)

2) (a) Solve $\frac{6x}{6} = \frac{54}{6}$

x = 9 (1)

(b) Solve $3y + 15 = 9$

.....
 $\frac{3y}{3} = \frac{-6}{3} = -2$

 y = -2 (1)

(c) Solve $4w + 2 = 2w + 7$

.....
 $\frac{2w}{2} = \frac{5}{2} = 2.5$

 w = 2.5 (3)

(Total 6 marks)

- 3) (a) Rearrange the formula to make w the subject of $y = 3w + 8$

$$y = 3w + 8$$

-8 -8

$$\frac{y-8}{3} = \frac{3w}{3}$$

Answer $w = \frac{y-8}{3}$ (2)

- (b) Solve $5(x + 4) = 3x + 23$

$$5x + 20 = 3x + 23$$

$-3x$ -20 $-3x$ -20

$$\frac{2x}{2} = \frac{3}{2} = 1.5$$

$x = 1.5$ (3)

(Total 5 marks)

- 4) Solve the simultaneous equations

$$5x + 6y = 3 \quad \times 2$$

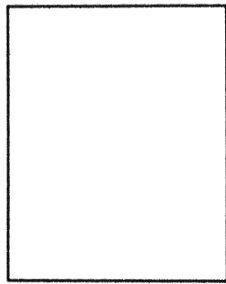
$$2x - 3y = 12 \quad \times 5$$

Do **not** use trial and improvement. You **must** show your working.

$$\begin{array}{r} 10x + 12y = 6 \\ - 10x - 15y = 60 \\ \hline 27y = -54 \\ y = -2 \end{array}$$
$$\begin{array}{r} 5x + 6y = 3 \\ 5x - 12 = 3 \\ \hline 5x = 15 = 3 \\ \frac{5x}{5} = \frac{15}{5} = 3 \end{array}$$

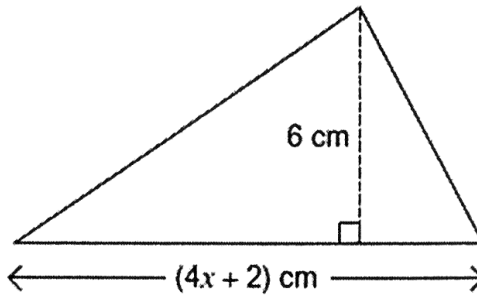
Answer $x = 3, y = -2$ (Total 3 marks)

5) The area of the rectangle and the area of the triangle are equal. Not drawn accurately.



2x cm

8 cm



6 cm

(4x + 2) cm

Work out the value of x.

$$16x = \frac{6(4x+2)}{2}$$

$$16x = 3(4x+2)$$

$$16x = 12x + 6$$

$$-12x \quad -12x$$

$$\frac{4x}{4} = \frac{6}{4} = 1.5$$

$$x = 1.5$$

(Total 4 marks)

(Total for test = 20 marks)