

1. (a) Solve $2x^2 = 72$

$$\begin{aligned}
 2x^2 &= 72 \\
 (\div 2) \quad (\div 2) \\
 x^2 &= 36 \\
 (\sqrt{\quad}) \quad (\sqrt{\quad}) \\
 x &= \pm 6
 \end{aligned}$$

$$\begin{array}{c}
 \frac{\pm 6}{(2)}
 \end{array}$$

(b) Expand and simplify $(2x + 1)(3x - 2)$

$$\begin{aligned}
 &= 6x^2 - 4x + 3x - 2 \\
 &= 6x^2 - x - 2
 \end{aligned}$$

$$\begin{array}{c}
 \frac{6x^2 - x - 2}{(2)}
 \end{array}$$

(c) Factorise $x^2 + 6x + 9$

$$\begin{array}{l}
 x^2 \rightarrow 1 \times 9 \\
 +6 \quad 3 \times 3
 \end{array}$$

$$\begin{aligned}
 x^2 + 6x + 9 &= (x+3)(x+3) \\
 &= (x+3)^2
 \end{aligned}$$

$$\begin{array}{c}
 \frac{(x+3)^2}{(1)}
 \end{array}$$

2. (a) Factorise $4m + 12$

$$\begin{aligned}
 &4m + 12 \\
 &= 4(m + 3) \\
 &= 4m + 12
 \end{aligned}$$

$$4(m + 3) \checkmark$$

(1)

expression	equation	formula	identity
inequality	term	factor	multiple

(b) Choose two words from the box above to make this statement correct.

$5y$ is a term in the expression $3x + 5y$

(2)

(Total for Question is 3 marks)

3. (a) Expand $x(x-4)$

$$= x \times x + (x)(-4)$$

$$= x^2 + (-4x)$$

$$= x^2 - 4x$$

$$\underline{x^2 - 4x} \checkmark$$

(1)

(b) Factorise $15y - 10$

$$\begin{array}{r} 15y \\ / \quad \backslash \\ y \quad 15 \\ \quad \wedge \\ \quad 3 \ 5 \end{array} \quad \begin{array}{r} 10 \\ \wedge \\ 2 \ 5 \end{array}$$

$$15y = 3 \times 5 \times y$$

$$10 = 2 \times 5$$

$$\therefore \text{HCF} = 5$$

$$15y - 10 = 5(3y - 2)$$

$$\underline{5(3y - 2)} \checkmark$$

(1)

(c) Solve $7(f-5) = 28$

$$\begin{array}{l} 7(f-5) = 28 \\ \div 7 \downarrow \quad \quad \quad \downarrow \div 7 \checkmark \\ f-5 = 4 \\ +5 \downarrow \quad \quad \quad \downarrow +5 \\ f = 9 \end{array}$$

$$f = \underline{9} \checkmark$$

(2)

(Total for Question is 4 marks)