

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

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

$\frac{+}{-} 6$

(2)

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

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

$6x^2 - x - 2$

(2)

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

$$\begin{matrix} x & 9 \\ + 6 & \end{matrix} \rightarrow \begin{matrix} 1 & 9 \\ 3 & 3 \end{matrix}$$

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

$(x+3)^2$

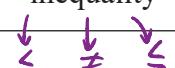
(1)

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

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

$4(m + 3)$ ✓
(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 $x(x - 4)$

$$\begin{aligned}
 x(x - 4) &= x \times x + (x)(-4) \\
 &= x^2 + (-4x) \\
 &= x^2 - 4x
 \end{aligned}$$

$\dots x^2 - 4x \checkmark$
(1)

(b) Factorise $15y - 10$

$$\begin{array}{r}
 15y \\
 \diagup \quad \diagdown \\
 y \quad 15
 \end{array}
 \quad
 \begin{array}{r}
 10 \\
 \diagup \quad \diagdown \\
 2 \quad 5
 \end{array}
 \quad
 \begin{aligned}
 15y &= 3 \times 5 \times y \\
 10 &= 2 \times 5 \\
 \therefore \text{HCF} &= 5
 \end{aligned}$$

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

$$5(3y - 2) \checkmark$$

(1)

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

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

$$f = \dots 9 \checkmark$$

(2)

(Total for Question is 4 marks)