

1 Expanding single brackets



- a) Expand $5(2x - 3)$
b) Expand and simplify $3(2x + 1) - 2(x - 4)$

$$\begin{aligned} \text{a) } & 10x - 15 \\ \text{b) } & 6x + 3 - 2x + 8 \\ & \hline & 4x + 11 \end{aligned}$$

2 Equation or identity?



- a) Write equation or identity for each. $3(x + 2) = 3x + 6$,
 $4x - 1 = 11$, $2x + 3x = 5x$, $x + 5 = 2x$
b) Show that $2(x + 5) + 3(x - 1) \equiv 5x + 7$

$$\begin{aligned} \text{a) } & \text{identity, equation, identity, equation} \\ \text{b) } & 2x + 10 + 3x - 3 = 5x + 7 \end{aligned}$$

3 Expanding double brackets



- a) Use the grid to expand and simplify $(x + 6)(x - 4)$
b) Expand and simplify $(x - 5)^2$

x	x	+6
x		
-4		

$$\begin{aligned} \text{a) } & x^2 + 6x - 4x - 24 = x^2 + 2x - 24 \\ \text{b) } & x^2 - 5x - 5x + 25 = x^2 - 10x + 25 \end{aligned}$$

4 Factorising quadratics



Factorise

- a) $x^2 + 11x + 24$
b) $x^2 - 3x - 28$

$$\begin{aligned} \text{a) } & 3 \times 8 = 24, 3 + 8 = 11 \\ & (x + 3)(x + 8) \\ \text{b) } & (x - 7)(x + 4) \end{aligned}$$

Quadratics, rearranging formulae and identities revision mat answers



Foundation A

5 The difference of two squares



- a) Factorise $x^2 - 36$
b) Expand $(x + 9)(x - 9)$. Why is there no x term?

$$\begin{aligned} \text{a) } & (x + 6)(x - 6) \\ \text{b) } & x^2 - 81 \\ & +9x \text{ and } -9x \text{ cancel out} \end{aligned}$$

6 Rearranging formulae



- a) Make x the subject of $y = 4x - 9$
b) Make b the subject of $P = 2(a + b)$

$$\begin{aligned} \text{a) } & y + 9 = 4x, x = \frac{y + 9}{4} \\ \text{b) } & \frac{P}{2} = a + b, b = \frac{P}{2} - a \end{aligned}$$

7 Solving quadratics by factorising



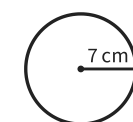
- a) Solve $x^2 + 3x - 18 = 0$
b) A rectangle is x cm wide and $(x + 4)$ cm long. Its area is 45 cm^2 . Find x .

$$\begin{aligned} \text{a) } & (x + 6)(x - 3) = 0, x = -6 \text{ or } 3 \\ \text{b) } & x^2 + 4x - 45 = 0, (x + 9)(x - 5) = 0 \\ & x = 5 \text{ (a length is not negative)} \end{aligned}$$

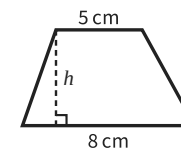
8 Using the formulae sheet



- a) Find the area of the circle to 1 decimal place.
b) The trapezium has an area of 52 cm^2 . Find h .



Not drawn to scale



$$\begin{aligned} \text{a) } & \pi \times 7^2 = 153.9 \text{ cm}^2 \\ \text{b) } & \frac{1}{2} \times 13 \times h = 52, h = 8 \text{ cm} \end{aligned}$$