Exercise 1B SKILLS INTERPRETATION

1 Expand and simplify if possible:

a $(x + 4)(x + 7)$ **b** $(x - 3)(x + 2)$ **c** $(x - 2)^2$

d $(x - y)(2x + 3)$ **e** $(x + 3y)(4x - y)$ **f** $(2x - 4y)(3x + y)$

g $(2x - 3)(x - 4)$ **h** $(3x + 2y)^2$ **i** $(2x + 8y)(2x + 3)$

j $(x + 5)(2x + 3y - 5)$ **k** $(x - 1)(3x - 4y - 5)$ **l** $(x - 4y)(2x + y + 5)$

m $(x + 2y - 1)(x + 3)$ **n** $(2x + 2y + 3)(x + 6)$ **o** $(4 - y)(4y - x + 3)$

p $(4y + 5)(3x - y + 2)$ **q** $(5y - 2x + 3)(x - 4)$ **r** $(4y - x - 2)(5 - y)$

2 Expand and simplify if possible:

a $5(x + 1)(x - 4)$ **b** $7(x - 2)(2x + 5)$ **c** $3(x - 3)(x - 3)$

d $x(x - y)(x + y)$ **e** $x(2x + y)(3x + 4)$ **f** $y(x - 5)(x + 1)$

g $y(3x - 2y)(4x + 2)$ **h** $y(7 - x)(2x - 5)$ **i** $x(2x + y)(5x - 2)$

j $x(x + 2)(x + 3y - 4)$ **k** $y(2x + y - 1)(x + 5)$ **l** $y(3x + 2y - 3)(2x + 1)$

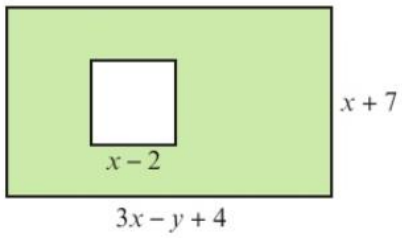
m $x(2x + 3)(x + y - 5)$ **n** $2x(3x - 1)(4x - y - 3)$ **o** $3x(x - 2y)(2x + 3y + 5)$

p $(x + 3)(x + 2)(x + 1)$ **q** $(x + 2)(x - 4)(x + 3)$ **r** $(x + 3)(x - 1)(x - 5)$

s $(x - 5)(x - 4)(x - 3)$ **t** $(2x + 1)(x - 2)(x + 1)$ **u** $(2x + 3)(3x - 1)(x + 2)$

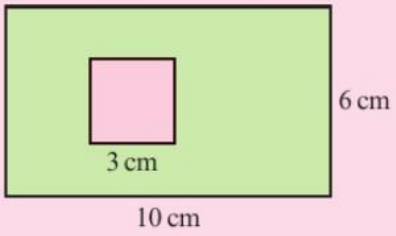
v $(3x - 2)(2x + 1)(3x - 2)$ **w** $(x + y)(x - y)(x - 1)$ **x** $(2x - 3y)^3$

(P) **3** The diagram shows a rectangle with a square cut out.
The rectangle has length $3x - y + 4$ and width $x + 7$.
The square has side length $x - 2$.
Find an expanded and simplified expression for the area **shaded** green.



Problem-solving

Use the same strategy as you would use if the lengths were given as numbers:



(P) **4** A **cuboid** has **dimensions** $(x + 2)$ cm, $(2x - 1)$ cm and $(2x + 3)$ cm.
Show that the volume of the cuboid is $(4x^3 + 12x^2 + 5x - 6)$ cm^3.

(E/P) **5** **Given that** $(2x + 5y)(3x - y)(2x + y) = ax^3 + bx^2y + cxy^2 + dy^3$, where a, b, c and d are **constants**, find the values of a, b, c and d. **(2 marks)**