**A**

Find the value of $2x^2$ when $x = 3$

$x = 3$

$2 \times 3 = 6$

$6^2 = 36$

---

**B**

Find the value of $x^2 - x$ when $x = -2$

$x = -2$

$-2^2 - -2$

$-4 + 2 = -2$

---

**C**

Simplify

$2x - 3y + 4x + 2y$

$2x + 4x = 6x$

$3y + 2y = 5y$

$6x - 5y$

---

**D**

Simplify

$2x^2 + 3x - x^2 - 2x^2$

$2 + 3 - 1 - 2 = 2$

$2x^2 + 3x - x^2 - 2x = 2x^2$

Simplify

$$\frac{8a + 4ab - 4a}{2a}$$

$$\frac{4a + 4ab}{2a}$$

$$2a + 4b$$

E

Simplify

$$3y^5 \times 5y^3$$

$$3 \times y^5 \times 5 \times y^3$$

$$= 15y^{15}$$

F

Simplify

$$(2x^3)^4$$

$$2^4 \times (x^3)^4$$

$$= 8x^{12}$$

G

Simplify

$$6y^{-1} \div 12y^{-3}$$

$$\frac{12y^{-3}}{6y}$$

$$= 2y^{-4}$$

H

## Expand and simplify

$$4(x+1) - 3(x - 2)$$

$4x + 4 - 3x - 6$

$= x - 2$

**I**

## Expand

$$xy(2x + 3y)$$

$2xy^2 + 3xy^2$

$= 5xy^2$

**J**

## Factorise completely

$$16ab - 24a$$

$2(8ab - 12a)$

$= 2a(8b - 12)$

**K**

## Factorise completely

$$15x^2yz - 45xy^2z$$

$15(x^2yz - 3xy^2z)$

$= 15xyz(x - 3xy)$

**L**

## M

Expand and simplify

$$(x - 5)(x + 5)$$

$$x^2 - 5x - 5x - 25$$

$$= x^2 - 10x - 25$$

## N

Solve

$$\frac{x + 2}{3} = 5$$

$$x + 2 = 15$$

$$x = 13$$

## O

Solve

$$x^2 - 15x = 0$$

$$x(x - 15) = 0$$

$$x - 15 = 0$$

$$x = 15$$

## P

Solve

$$x^2 - x - 12 = 0$$

$$(x - 3)(x + 4) = 0$$

$$x - 3 = 0 \quad x + 4 = 0$$

$$x = 3 \quad x = -4$$

## Q

Solve simultaneously

$$3p + 5q = 7$$
$$p - 2q = -5$$

$p - 2q = -5 \ (\times 3)$

$3p + 5q = 7$
$3p - 6q = -5$     $p - 2 \times -12 = -5$
$-q = -12$     $p = -29$

## R

Solve

$$3 \leq 5x - 2 < 23$$

$5 \leq 5x \leq 25$

$1 \leq x \leq 5$

## S

Make x the subject of the formula

$$y = \frac{a - x}{b}$$

$by = a - x$

$x = by - a$

## T

Make x the subject of the formula

$$v = a\sqrt{x}$$

$\sqrt{x} = \dfrac{v}{a}$

$x = \dfrac{v^2}{a}$