

# Algebra

## Simple algebraic techniques

- ① Identify whether each of these is a formula, expression, equation or identity. (★)

a  $v^2 = u^2 + 2as$  (1 mark)

.....

d  $(2a^2b)^2 = 4a^4b^2$  (1 mark)

.....

b  $5x(2x + y) = 10x^2 + 5xy$  (1 mark)

.....

e  $P = I^2R$  (1 mark)

.....

c  $6a^2b$  (1 mark)

.....

**[Total: 5 marks]**

- ② Simplify  $4x + 3x \times 2x - 3x$ . (2 marks, ★★)
- .....

- ③ Karl is trying to work out two values of  $y$  for which  $y^3 - y = 0$ .

The two values he finds are 1 and  $-1$ .

Are these two values correct? You must show your working. (2 marks, ★★★)

.....

- ④ Simplify these expressions. (★★)

a  $6x - (-4x)$   
(1 mark)

.....

b  $x^2 - 2x - 4x + 3x^2$   
(1 mark)

.....

c  $(-2x)^2 + 6x \times 3x - 4x^2$   
(2 marks)

.....

**[Total: 4 marks]**

⑤  $s = \frac{v^2 - u^2}{2a}$  (★★)

Work out the value of  $s$  when

a  $v = 3, u = 1$  and  $a = 2$   
(1 mark)

.....

b  $v = -4, u = 3$  and  $a = 4$   
(1 mark)

.....

c  $v = 5, u = -2$  and  $a = -7$   
(1 mark)

.....

**[Total: 3 marks]**

### NAILIT!

Make sure you understand the difference between terms such as equation, expression, identity and formula.

### NAILIT!

Collect together like terms, with identical letters and powers.