

# Section 7

## Algebra

### Unit 7.1 | Four basic operations

What are the most important points to remember?

Done

- The four basic operations **addition, subtraction, multiplication and division** can be carried out on variables in exactly the same way as on numbers.

#### Example

- Simplify  $5a + b + a^2 + 2(b^2 - b) + 3(b - a)$

First multiply out the brackets:  $5a + b + a^2 + 2b^2 - 2b + 3b - 3a$

Then gather like with like:  $5a - 3a + b - 2b + 3b + a^2 + 2b^2$

Simplify:  $2a + 2b + a^2 + 2b^2$

### Questions

Draw a ring around the correct answer in questions 1–10.

1  $-q + 3p + 2q - 4p =$

A  $p - q$

B  $-p + q$

C  $-p - q$

D  $p + q$

2  $3y - 2(y + 4) =$

A  $-y - 8$

B  $-y + 8$

C  $y + 8$

D  $y - 8$

3  $\frac{2j}{x} + \frac{2k}{y} =$

A  $\frac{2jk + 2kx}{xy}$

B  $\frac{2jy + 2kx}{8xy}$

C  $\frac{2jk + 2kx}{xy}$

D  $\frac{2jy + 2kx}{8xy}$

4 The product of three times  $x$  and two times minus  $y$  is

A  $-6(x - y)$

B  $6xy$

C  $-6xy$

D  $6(x + y)$

5  $3x - 2(x + 5) =$

A  $x - 10$

B  $x + 10$

C  $2x - 7$

D  $2x + 3$

6  $x - 2y + 3x + y =$

A  $2x - y$

B  $2x + y$

C  $4x + y$

D  $4x - y$

**Section 7** Algebra

- 7  $\frac{3j}{2m} + \frac{k}{n} =$
- A  $\frac{3jk}{2mn}$       B  $\frac{3n+2m}{3jk}$       C  $\frac{3jn+2km}{2mn}$       D  $\frac{(3j+k)}{2(m+n)}$
- 8  $-2y + 4(1 - 2y) + 4 =$
- A  $-10y + 8$       B  $10y - 8$       C  $-6y$       D  $6y + 4$
- 9 The sum of four times  $p$  and two times minus  $y$  is
- A  $4p - 2y$       B  $4p + 2y$       C  $-(4p + 2y)$       D  $2y - 4p$
- 10 Which of the following expressions is equal to zero?
- A  $-2k - 3j + (2k - 3j)$       B  $-(2k - 3j) + 2k + 3j$       C  $-2(k - j) - 2(2j - k)$       D  $-2k - 4j + 2(2j + k)$