

## Radicals and Exponents

### Section A

- 1 Simplify  $q^5 \times q^4$ .
- 2 Simplify  $p^6 \div p^4$ .
- 3 Simplify  $5q^0$ .
- 4 Simplify  $(a^4)^{10}$ .
- 5 Simplify  $\frac{4s^7 \times 6t^5}{12st^2}$ .
- 6 Write  $p^{-1}$  in fractional form.
- 7 Write  $\frac{8}{q^4}$  with a negative index.
- 8 Find  $\sqrt{100}$ .

### Section B

- 6 Evaluate  $\sqrt{72} \times \sqrt{2} \div \sqrt{36}$ .
- 7 Simplify  $\sqrt{90}$ .
- 8 Simplify  $5\sqrt{2} + \sqrt{8} + 3\sqrt{18}$ .
- 9 Simplify  $4\sqrt{5} \times \sqrt{40}$ .
- 10 Simplify  $\frac{2\sqrt{6}}{\sqrt{72}}$ .

### Section C

- 4 Factorise  $27xy - 45y$ .
- 5 Factorise  $25y^2 - 85xy + 35x^2y^2$ .
- 6 Factorise  $-27abc + 36ac - 18a^2bc$ .
- 7 Factorise  $9(x - 2y) + b(x - 2y)$ .
- 8 Factorise  $7x + 14 - 2xy - 4y$ .
- 9 Factorise  $3abc + 6ac + b + 2$ .
- 10 Factorise  $12xy - 8 + 3x^2y - 2x$ .

### Section D

- 6 Solve the quadratic equation  $6p(3p - 5) = 0$ .
- 7 Solve the quadratic equation  $5x^2 - 80 = 0$ .
- 8 Solve the quadratic equation  $5x^2 - 12x = 0$ .
- 9 Solve the quadratic equation  $x^2 - 12x + 11 = 0$ .
- 10 Solve the quadratic equation  $x^2 + x - 2 = 0$ .