

	Introduce	Strengthen	Deepen
Surds	<p>Q1 $5 + \sqrt{35}$</p> <p>Q2 $\frac{\sqrt{30}}{3}$</p> <p>Q3 $11 + 7\sqrt{5}$</p> <p>Q4 $61 + 27\sqrt{3}$</p> <p>Q5 $\frac{\sqrt{2} + 2}{2}$</p>	<p>Q1 $74 - 40\sqrt{3}$</p> <p>Q2 $\frac{1 + 5\sqrt{3}}{10}$</p> <p>Q3 $3\sqrt{7} - 7$</p> <p>Q4 $13\sqrt{3}$</p>	<p>Q1 $16\sqrt{7}$</p> <p>Q2 $6 + 3\sqrt{11}$</p> <p>Q3 $5\sqrt{h} - 1$</p> <p>Q4 $\frac{9\sqrt{3} - 13}{2}$</p>
	<p>Q1 $m^2 + 11m + 18$</p> <p>Q2 $8a^2 + 22a + 15$</p> <p>Q3 $4x^2 - 3x - 27$</p> <p>Q4 $36n^2 - 60n + 25$</p>	<p>Q1 $24d^2 + 38d + 10$</p> <p>Q2 $x^3 + 4x^2 + 8x + 5$</p> <p>Q3 $15n^2 + 31n + 43$</p> <p>Q4 $t^3 - t^2 - 22t + 40$</p>	<p>Q1 $40x^3 + 38x^2 - 131x + 60$</p> <p>Q2 $a = 5, b = -3, c = 6$</p> <p>Q3 $\frac{1}{125x^3} + \frac{1}{64y^3}$</p> <p>Q4 Equivalence correctly shown, for example through expanding brackets and simplifying both sides of the equivalence.</p>
	<p>Q1 $(y + 4)(y + 5)$</p> <p>Q2 $(x + 4)(x - 5)$</p> <p>Q3 $(w - 6)(w - 9)$</p>	<p>Q1 $(x + 4)(x - 4)$</p> <p>Q2 $(2r + 1)(r + 7)$</p> <p>Q3 $(5x + 2)(x + 4)$</p>	<p>Q1 $(7h + m)(7h - m)$</p> <p>Q2 $(5 - b)(b - 2)$</p> <p>Q3 $10n(2k - 5n)$</p>
Simplifying expressions	<p>Q1 $12y^7$</p> <p>Q2 $\frac{1}{h^{15}}$</p> <p>Q3 $\frac{t^3u}{4}$</p> <p>Q4 $\frac{t^6}{u^{10}}$</p> <p>Q5 $\frac{11y + 3}{6}$</p> <p>Q6 $\frac{6}{a + 4}$</p>	<p>Q1 $\frac{a}{6k}$</p> <p>Q2 $8g^4h^2$</p> <p>Q3 $\frac{1}{2x - 35}$</p>	<p>Q1 $a = 3, b = 21, c = 24$</p> <p>Q2 $8nr^3(t + 6)$</p> <p>Q3 $a = 2, b = -3, c = -20, d = 4$</p>

Operations with algebraic fractions

Introduce

- Q1** $7a$
Q2 $\frac{15}{v}$
Q3 $\frac{37n + 14}{35}$

Strengthen

- Q1** $\frac{18}{a}$
Q2 $\frac{5x - 1}{(5x - 7)(x + 1)}$
Q3 $\frac{x - 4}{2x(x + 5)}$
Q4 $\frac{7ab}{5k}$

Deepen

- Q1** $\frac{3x - 11}{(6 - x)(6 + x)}$
Q2 $\frac{5x + 49}{x + 7}$

Solving quadratic equations

- Q1** $x = 9$ and $x = -5$
Q2 $y = 2$ and $y = -5$
Q3 $w = 2$ and $w = 6$
Q4 $x = \frac{-5}{2}$ and $x = \frac{-3}{2}$
Q5 $m = \frac{1}{2}$ and $m = 5$

- Q1** $y = 3 \pm \sqrt{2}$
Q2 $y = \frac{-2}{3}$ and $y = \frac{5}{2}$
Q3 $y = \frac{-7}{2}$ and $y = \frac{5}{3}$
Q4 $r = -0.15$ and $r = 1.48$

- Q1** $x = -2$ and $x = 18$
Q2 $n = \frac{2}{5}$
Q3 $y = \frac{-1}{2}$ and $y = 3$
Q4 $b = 3, c = -5$

Linear simultaneous equations

- Q1** $(2, 0)$ and $(6, 0)$
Q2 $x = -2.8$ and $x = 1.8$
Q3 $x = -2$ and $x = 1$
Q4 a) $(x + 3)^2 + 2$
 b) $(-3, 2)$

- Q1** $(-4, -26)$
Q2 $\left(\frac{5}{2}, \frac{-21}{4}\right)$
Q3 $(1, -13)$
Q4 $x = -1$ and $x = 2.5$

- Q1** 5
Q2 $a = -10, b = 29$
Q3 a) $(8, -1)$
 b) 0

Straight-line graphs

- Q1** $y = -5x + 3$
Q2 $y = \frac{4}{7}x + 5$
Q3 $\frac{-1}{8}$
Q4 $y = 3x + 4$
Q5 $y = 5x - 7$

- Q1** $x = -1, y = 3$
Q2 $x = 9, y = -7$
Q3 $x = \frac{1}{2}, y = \frac{3}{2}$
Q4 $t = 5, u = 10$

- Q1** $x = 5, y = -3$
Q2 $x = 3, y = 4, a = 1$
Q3 $x = 4, y = 1$
Q4 $x = 6, y = 2$

- Q1** $\frac{h}{4}$
Q2 $(12, 4)$
Q3 7:10
Q4 $y = \frac{1}{2}x - 15$

Right-angled trigonometry

Introduce

- Q1** 4.2 mm
Q2 4.5 cm
Q3 49°

Strengthen

- Q1** 18.28 m
Q2 40.2°
Q3 61.9°

Deepen

- Q1** 45.9°
Q2 15.62 cm
Q3 79°
Q4 10.91 cm

Further trigonometry

- Q1** 11.7 cm
Q2 10.1 m
Q3 41.7°
Q4 77°

- Q1** 3.2 cm
Q2 85.6°

- Q1** 2.2 cm
Q2 $(4 + 7\sqrt{6})$ cm
Q3 30
Q4 $a = 16, b = 3, c = 9$