



- 1) Express 216 as a product of prime factors
and hence show if it is a square or a cube number

- 2) Find the 50th term of the sequence -4, 5, 14, 23, ...

- 3) Work out $2 \times 3^2 - 4 + 5 \times 6$

- 4) Work out $43.68 \div 1.2$

- 5) Work out 0.083×0.17



- 1) Work out $2\frac{4}{5} \div 3\frac{1}{3}$
- 2) Decrease £780 by 15%
- 3) Expand and simplify $4(3x + 2) - (3 - 2x)$
- 4) Solve $3x - 13 = 7 + 5x$
- 5) Work out the value of $8 - 2c^2$ when $c = 3$



1) Expand and simplify $(3x - 5)(4x - 7)$

2) Factorise fully $6x^3 - 18x^4$

3) Factorise $x^2 - 3x - 18$

4) Work out $64 \div 0.4$

5) Work out $3\frac{1}{3} - 2\frac{5}{6}$



- 1) Make x the subject of $y = \sqrt{ax} - b$
- 2) Divide 440kg in the ratio 3 : 5
- 3) Work out the value of $3x^2 - 2y$ when $x = -2$ and $y = 3$
- 4) The mean of 7, 15, x , 7, 8 and 18 is 10. Find x
- 5) Solve $\frac{2x-1}{3} = 2x - 11$



- 1) Solve the inequality $7x + 5 \geq 5x - 7$
and show the solution on a number line

- 2) Expand and simplify $3(2a - b) + 3(4b - 3a)$

- 3) Work out $4\frac{1}{6} \div 2\frac{3}{5}$

- 4) Work out 0.34×3.5

- 5) Work out $2.07 \div 0.6$



1) Simplify $\sqrt{20} + 2\sqrt{45} + \sqrt{50} + \sqrt{80}$

2) Simplify $a^5 \times a^3 \times b^2 \div a^2$

3) Complete $65\text{cm}^2 = \dots\dots\dots\text{mm}^2$

4) Make x the subject of $ax = xy + b$

5) Calculate the area of a semi-circle with diameter 10cm. Leave your answer in terms of π



- 1) Factorise and solve $x^2 - 7x + 12 = 0$

- 2) Express in completed square form $x^2 - 18x + 100$

- 3) Simplify $\frac{3x+4}{2} - \frac{2x-1}{3}$

- 4) Expand and simplify $3\sqrt{2}(2\sqrt{2} - 7)$

- 5) Find the gradient of the line $4x + 3y = 7$



- 1) Simplify $\frac{(3x^2y^3)^2}{x^2y}$
- 2) Express 324 as a product of primes and hence find its square root
- 3) A price is increased from £300 to £732. Calculate the percentage change
- 4) Estimate $\frac{46.77 \times 319}{0.032}$ by rounding each number to 1 significant figure
- 5) Express 0.005042 in standard form to 3 significant figures



- 1) Solve, by completing the square
 $x^2 - 14x + 40 = 0$

- 2) Simplify $\frac{x^2+2x-15}{x^2-9}$

- 3) Work out $4\frac{1}{3} \div 2\frac{8}{9}$

- 4) Solve $-4 \leq 5x + 6 < 6$ and display the solution on a number line

- 5) Expand and simplify $(7x - 4)(2x + 2)$



- 1) Work out $18.205 \div 0.05$
- 2) Find the gradient of the line joining $(-7, 3)$ and $(-5, -6)$
- 3) Make x the subject of $y^2 - 5x = ax + b$
- 4) Evaluate $64^{\frac{2}{3}}$
- 5) Solve simultaneously $3x + 3y = 3$ and $2x - 6y = -30$



- 1) Solve using the quadratic formula (and a calculator)
 $3x^2 - 5x - 1 = 0$

- 2) Work out $5.4 \times 10^3 + 2.6 \times 10^4$

- 3) Find the equation of the line perpendicular to $y = -3x + 7$
passing through the point $(9, 6)$

- 4) Expand and simplify $(5x - 6)^2$

- 5) Find the highest common factor of 60 and 84



- 1) Solve simultaneously:
 $2x - 2y = 22$ and $3x + 6y = -12$

- 2) Simplify $\sqrt{7} \times \sqrt{14}$

- 3) ? $\text{m}^3 = 500 \text{ cm}^3$

- 4) Work out the value of $3x^3 - x^2$ when $x = -2$

- 5) Solve by factorising $6x^2 - 13x - 15 = 0$