



Number

Factors, multiples and primes

- 6
- 17, 19, 23
- $60 = 2^2 \times 3 \times 5$
- Drummer 1 hits her drum at: 6 12 18 24 30 36 42 48 54 60 seconds
Drummer 2 hits his drum at: 8 16 24 32 40 48 56 seconds
They hit their drums at the same time twice (two times) after 24 and 48 seconds.

Ordering integers and decimals

- 12, -8, -1, 0, 2
- 0.32, 0.3, 0.23, 0.203
- a** $-4 < 0.4$ **c** $-0.404 > -0.44$
b $4.200 < 4.3$ **d** $0.33 < 0.4$

Calculating with negative numbers

- a** -10 **b** -4 **c** 5 **d** 1
- a** -18 **b** 4 **c** 40 **d** -16
- 22
- 1 correct answer; 4 incorrect answers

Multiplication and division

- a** 2142 **b** 11 223 **c** 92 **d** 52
- a** 12 **b** 12
- £335
- 1196 hours

Calculating with decimals

- 76.36
- £7.51
- 38.29
- Flo raises £28.75; Kirsty raises £143.75

Rounding and estimation

- a** 0.798 **b** 0.80
- 5
- a** £7500
b Overestimate, because the concert ticket price and number of tickets sold were rounded up, and so the amount of income was estimated more than it really is.

Converting between fractions, decimals and percentages

- a** $\frac{71}{1000}$ **c** 40%
b 0.63 **d** $\frac{8}{25}$
- a** 0.3125 **b** 31.25%
- $\frac{5}{8} = 0.625$ 0.65 60% = 0.6
Therefore, 0.65 is largest.

Ordering fractions, decimals and percentages

- a** $\frac{1}{2} < 0.6$ **b** $\frac{3}{4} > 0.7$ **c** $-\frac{3}{10} < 0.2$
- a** $\frac{5}{12}$ $\frac{9}{20}$ $\frac{7}{15}$
b $\frac{1}{25}$ 0.4 45%
- $\frac{1}{3} = 33.3\%$; $\frac{2}{5} = 40\%$, so shop C, shop A, shop B
- $\frac{5}{9}$ 38.5% 0.38 $\frac{3}{10}$

Calculating with fractions

- $\frac{29}{45}$ 2 $\frac{1}{12}$ 3 $\frac{11}{21}$ 4 10

Percentages

- 10
- £13.60
- 14 193
- £1008

Order of operations

- 7 2 23 3 4.0964

Exact solutions

- 0.133 cm²
- $1\frac{7}{9}$ m²
- $2\sqrt{3}$ cm²
- Area of a circle = πr^2
The fraction of the circle shown = $\frac{3}{4}$
The area of the circle shown = $\frac{3}{4} \times \pi r^2$
Radius = 2 cm
The area of the shape = $\frac{3}{4} \times \pi \times 2^2 = \frac{3}{4} \times \pi \times 4 = 3\pi$

Indices and roots

- a** 7⁴ **b** 5⁻³
- a** 16 **b** $\frac{1}{100}$
- $3^{-2} = \frac{1}{9}$ $\sqrt[3]{27} = 3$ $\sqrt{25} = 5$ 2³ = 8
- 1

Standard form

- 2750 3 6.42×10^{-3}
- 1.5×10^8 4 2.8×10^{-4} km

Listing strategies

- 259, 295, 529, 592, 925, 952
- a**

		4-sided spinner			
		0	1	2	3
3-sided spinner	1	1	2	3	4
	2	2	3	4	5
	3	3	4	5	6

- b** 3
- 15
- spj; spi; sfj; sfi; bpj; bpi; bfj; bfi

Algebra

Understanding expressions, equations, formulae and identities

- a** identity **b** equation **c** expression
- a** equation, because it has an equals sign and can be solved
b formula, because it has letter terms, an equals sign and the values of the letters can vary
c an expression because it has letter terms and no equals sign
d formula, because it has letter terms, an equals sign and the values of the letters can vary
- a** Any of: $2x + 10$ or $10x + 2$ or $x + 210$ or $x + 102$
b Any of: $2x = 10$ or $10x = 2$

Simplifying expressions

- 8x
- a** $48a^2$ **b** $30p^3$
- 5y
- 8u