# Answers

For full worked solutions, visit: www.scholastic.co.uk/gcse

3 4.0964



# Number

# Factors, multiples and primes

- 16
- **2** 17, 19, 23
- $3 \quad 60 = 2^2 \times 3 \times 5$
- 4 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**

1 -12, -8, -1, 0, 2

2	0.3	32, 0.3, 0.23, 0.203		
3	а	-4 < 0.4	с	-0.404 > -0.44
	b	4.200 < 4.3	d	0.33 < 0.4

## Calculating with negative numbers

1	<b>a</b> -10	<b>b</b> -4	<b>c</b> 5	<b>d</b> 1
2	<b>a</b> -18	<b>b</b> 4	<b>c</b> 40	<b>d</b> -16
3	22			

4 1 correct answer; 4 incorrect answers

## **Multiplication and division**

1	<b>a</b> 2142	b	11 223	с	92	d	52
2	<b>a</b> 12	b	12				
3	£335						
4	1196 hours						

#### **Calculating with decimals**

- 1 76.36
- 2 £7.51
- 3 38.29
- 4 Flo raises £28.75; Kirsty raises £143.75

#### **Rounding and estimation**

- **1 a** 0.798 **b** 0.80
- 2 5
- 3 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

- 1
   a  $\frac{71}{1000}$  c 40%

   b
   0.63
   d  $\frac{8}{25}$
- **2 a** 0.3125 **b** 31.25%
- **3**  $\frac{5}{8} = 0.625$  0.65 60% = 0.6

Therefore, 0.65 is largest.

# Ordering fractions, decimals and percentages

1 **a**  $\frac{1}{2} < 0.6$  **b**  $\frac{3}{4} > 0.7$  **c**  $-\frac{3}{10} < 0.2$ 2 **a**  $\frac{5}{12}$   $\frac{9}{20}$   $\frac{7}{15}$ **b**  $\frac{1}{25}$  0.4 45%

3  $\frac{1}{3} = 33.3\%; \frac{2}{5} = 40\%$ , so shop C, shop A, shop B

4  $\frac{5}{9}$  38.5% 0.38  $\frac{3}{10}$ 

# **Calculating with fractions**

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

## Percentages

- 1 10
- **2** £13.60
- **3** 14193
- 4 £1008

# **Order of operations**

1 7

#### **Exact solutions**

- 1 0.133 cm<sup>2</sup>
- 2  $1\frac{7}{a}$  m<sup>2</sup>
- 3  $2\sqrt{3}$  cm<sup>2</sup>
- 4 Area of a circle =  $\pi r^2$ 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

1	<b>a</b> 7 <sup>4</sup>	<b>b</b> 5 <sup>-3</sup>	
2	<b>a</b> 16	<b>b</b> $\frac{1}{100}$	
3	$3^{-2} = \frac{1}{9}$	$\sqrt[3]{27} = 3$ $\sqrt{25} = 5$	2 <sup>3</sup> = 8
4	1		

2 23

## Standard form

1	2750	3	$6.42  imes 10^{-3}$
2	$1.5  imes 10^{8}$	4	2.8 × 10⁻⁴ km

## **Listing strategies**

1 259, 295, 529, 592, 925, 952 2 a

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

**b** 3

3 15

4 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 signd 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

- 1 8*x*
- **2 a**  $48a^2$  **b**  $30p^3$
- **3** 5y
- **4** 8*u*