Contents Side-by-side Mathematics Exercises

(Second Edition)

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Exercise	Торіс	Strand	Learning Objectives	
1	Introduction to Circles	Shape and Space	Learn the concept and basic properties of circles.	
2	Drawing Circles	Shape and Space	• Draw circles.	
3	Cross Sections of 3-D Shapes	Shape and Space	 Recognise the cross sections of prisms, cylinders, pyramids, cones and spheres. Learn the concept and basic properties of spheres. 	
4	3-D Shapes (1)	Shape and Space	 Learn the concepts of vertices and edges of a 3-D shape. 	
5	3-D Shapes (2)	Shape and Space	 Learn the concepts of cubes and cuboids, including their nets and making of frameworks. Recognise the nets of cylinders. 	
6	Multiplication of Decimals (1)	Number	 Perform multiplication of a number and 10, 100, 1000. Perform multiplication of a number and 0.1, 0.01, 0.001. Perform multiplication of two numbers, including multiplication of decimals and whole numbers. Estimate the results of calculations. 	12
7	Multiplication of Decimals (2)	Number	 Use rounding to obtain approximate values of decimals. Solve word problems on multiplication of decimals. 	14
6	Test 1 (Exercises 1–7)			16
8	Division of Fractions (1)	Number	 Understand that fractions can be regarded as divisions of two whole numbers. Perform division of two numbers (the divisor is a whole number). 	20
9	Division of Fractions (2)	Number	 Perform division of two numbers (the divisor is a fraction). 	22
10	Word Problems on Division of Fractions	Number	 Solve word problems on division of two numbers (including fractions and whole numbers). Understand that fractions can be regarded as ratios of two whole numbers. 	24
11	Mixed Operations of Three Numbers	Number	 Perform division of three numbers (including fractions and whole numbers). Perform mixed operations of three numbers (including fractions and whole numbers). 	26
12	Word Problems on Mixed Operations of Three Numbers	Number	 Learn more about solving word problems on division. Solve word problems on mixed operations of three numbers. 	28
6	Test 2 (Exercises 1–12)			30

5**B**



Exercise	Торіс	Strand	Learning Objectives	Page
13	More about Algebraic Expressions	Algebra	 Learn more about algebraic expressions, and use algebraic expressions to represent the operations of and relations between quantities that are described in words and involve unknown quantities. 	34
14	More about Simple Equations (1)	Algebra	• Learn more about solving simple equations.	
15	More about Simple Equations (2)	Algebra	 Solve word problems by using equations. 	38
16	Introduction to Volume	Measures	 Understand the concept of volume. Compare intuitively the volumes of objects. Learn the cubic centimetre (cm³) and cubic metre (m³). Measure and compare the volumes of objects in cubic centimetres. 	40
17	Volumes of Cuboids and Cubes	Measures	 Learn and apply the formulae for the volumes of a cuboid and a cube. 	42
18	Volumes of 3-D Shapes	Measures	 Find the volumes of simple 3-D shapes made up of cubes and cuboids. Apply the formulae for the volumes of a cube and a cuboid to solve word problems. 	44
Examination (Exercises 1–18)				
	Pre-S1 — Analysis of Common Questions			
7	Pre-S1 — High Grade Shot			
	Brainy Challenge			
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Interactive Maths — 3-D Shapes Exploration (Enrichment Topic)			

The book includes:

- Warm-up Worksheets
- Problem-solving Worksheets
- Answer Key and Glossary

Introduction to Circles



Do the following questions according to the given circles.

- 1. In the figure on the right, point O is the centre of the circle.
 - (a) OA is a _____ of the circle.
 - (b) _____ is a diameter of the circle.
 - (c) If BC is 8 cm long, then the diameter of the circle could be * 6 cm / 8 cm / 9 cm.
 (* Circle the answer.)
- 2. In the figure on the right, both RP and RS are radii of the circle.
 - (a) Point _____ is the centre of the circle.
 - (b) The length of _____ is 2 times that of RQ.
 - (c) Triangle PQR is a/an * equilateral / isosceles / right-angled triangle.
 (* Circle the answer.)

Study the figures and complete the following questions.

3.



- (a) Mark the position of the centre of the circle above with \bullet .
- (b) Use a ruler to measure the length of the diameter of the circle. It is _____ cm.
- **4.** In the figure on the right, there are two circles of same size inside the rectangle.
 - (a) The radius of each circle is _____ cm.
 - (b) The length of the rectangle is _____ cm.





Note (

Circumference: the perimeter of a circle. Centre:

a point inside a circle; the distances from the centre of a circle to all points on the circle are the same.

Radius:

a line segment joining the centre of a circle to any point on the circle.

Diameter:

a line segment passing through the centre of a circle with both ends lying on the circle; the length is 2 times that of the radius; and the length is the longest among all line segments joining any two end points on the circle.



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- 5. Charles drew a triangle and a circle. Point O is the centre of the circle.
 - (a) Charles drew
 - * an equilateral / an isosceles / a right-angled triangle. (* Circle the answer.)
 - (b) Which of the following line segments is a radius? (Blacken the circle next to the answer.)
 - A. EF ОВ. EΗ O C. FO \bigcirc D. FG
- 6. In the figure on the right, the line segments AR and PS are diameters of the circle.
 - (a) Point _____ is the centre of the circle.
 - (b) Line segment * QS / CS / BR is the radius of the circle. (* Circle the answer.)
- 7. In the figure on the right, there is a small circle and two large circles of the same size. Points I, J and K are the centres of the three circles. The lengths of IJ and JK are 23 cm and 30 cm respectively. What is the diameter of the small circle? (Write the letter next to the answer in the \Box .)
 - A. 7 cm
 - B. 8 cm
 - C. 14 cm
 - D. 16 cm
- 8. In the figure on the right, points W, X, Y and Z Warm-up @ are the centres of four circles of the same size. The diameter of each circle is 12 cm. What is the perimeter of the coloured part? (Write the letter next to the answer in the \square .)
 - A. 24 cm
 - B. 36 cm
 - C. 48 cm
 - D. 72 cm



J•



Κ

Find out how IJ and JK are made up of radii of the



Find out the number of radii of the circles that form the perimeter of the coloured part.



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7		Warm-up Worksheet (1) Number (Revision: topics in 1A–5A)	Name:Class:Core					
1.		148 036 725	J					
	(a)	The number above is read as						
	It is an * odd / even number. (* Circle the answer.)							
	(b)	(b) The number above rounded to the nearest hundred thousand is						
2.	2. Fill in the blanks with suitable numbers according to the patterns.							
	(a) (b)	3 751 998, 3 751 999,, 3 752 40 682 000,, 40 702 000,	, 40 722 000					
3.	 3. Which of the following groups of numbers are common multiples of 12 and 16? (Blacken the circle next to the answer.) A. 24, 48 B. 48, 72 C. 48, 96 D. 96, 112 							
4.	142	142 + 185 ÷ 5 =						
5.	5. $482 \times 8 = 4 \times$							
6.	6. 7 + 3.42 + 10.8 =							
7.	7. $1\frac{7}{9} \times \frac{1}{3} =$ (Express your answer as a fraction in the lowest terms.)							
8.	8. $5 - (2\frac{1}{3} + 1\frac{3}{5}) =$ (Express your answer as a fraction in the lowest terms.)							
9.	Arr Ans	ange the numbers on the right from the smallest to swer:,,,,, (Smallest) (Greatest)	the greatest. $4\frac{5}{8}$, $4\frac{2}{3}$, $3\frac{4}{5}$					

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