Mathematics · Grade 7

Space and Shape

Term 1–4 | 12 questions | CAPS-aligned

TOTAL 74 MARKS

NAME AND SURNAME _____ CLASS _____ DATE _____

Instructions

1. Read all the questions carefully before you begin writing.
2. Answer all the questions on the question paper itself.
3. Show all your working where the question asks for it.
4. Write neatly. Work that cannot be read cannot be marked.
5. You may use a pencil, a ruler, a protractor and a compass for drawings.
6. Calculators are not allowed.

Question	Content of the question	Marks	Obtained
1	Multiple choice	7	
2	Matching	4	
3	Measuring angles and quadrilaterals	8	
4	Solving problems with properties of shapes	6	
5	Geometry of 2D shapes	8	
6	Circles	5	
7	Quadrilaterals	5	
8	Lines of symmetry	2	
9	Transformations and 3D objects	6	
10	Transformation geometry	4	
11	Measuring angles, the circle and 3D objects	7	
12	Triangles, quadrilaterals and the circle	12	
	Total	**74**	
	Percentage		%

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1 Multiple choice

7 marks

Choose the correct answer and circle its letter.

PRACTICE EXAMPLE · DO THIS ONE TOGETHER FIRST

How many sides does a triangle have?

a 2 b 3 c 4

A triangle has three sides, so the answer is b. Circle the b.

This example does not count for marks. It only shows you how to answer.

1.1 A triangle with at least two equal sides is called: **(1)**

(a) an isosceles triangle (b) a right-angled triangle (c) an obtuse-angled triangle

1.2 An angle of 120° is: **(1)**

(a) an acute angle (b) an obtuse angle (c) a reflex angle

1.3 How many vertices (corners) does a triangular prism have? **(1)**

(a) 5 (b) 6 (c) 9

1.4 A quadrilateral with two pairs of equal ADJACENT sides (next to each other) is a: **(1)**

(a) Kite (b) Rectangle (c) Trapezium

1.5 How many lines of symmetry does a square have? **(1)**

(a) 2 (b) 4 (c) 8

1.6 A net has 2 triangles and 3 rectangles. Which 3D object can be folded from it? **(1)**

(a) a triangular prism (b) a square-based pyramid (c) a tetrahedron

1.7 How many vertices does a pentagonal prism have? **(1)**

(a) 5 (b) 10 (c) 15

2 Matching

4 marks

Match the description in COLUMN A with the correct word in COLUMN B. Write only the LETTER. One word is left over.

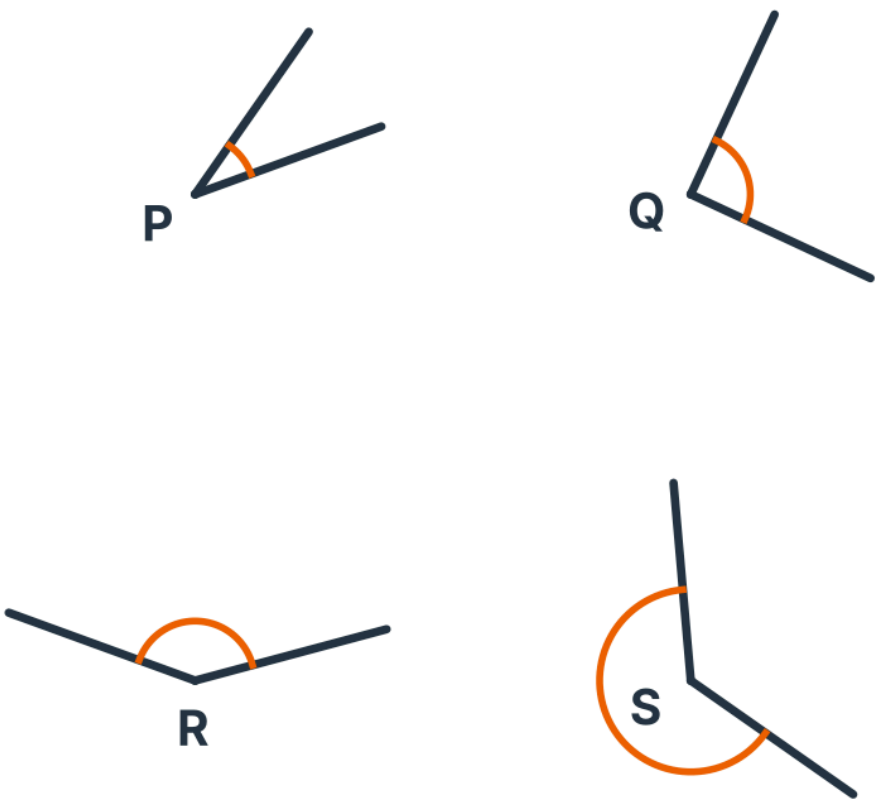
2.1 **(4)**

COLUMN A	COLUMN B	Answer
1. Two lines that meet at a right angle	A. Straight angle	1 = _____
2. Lines that stay the same distance apart and never meet	B. Revolution	2 = _____
3. An angle of exactly 180°	C. Perpendicular lines	3 = _____
4. An angle greater than 180° but smaller than 360°	D. Reflex angle	4 = _____
	E. Parallel lines	

3 Measuring angles and quadrilaterals

8 marks

3.1 Use your protractor to measure angles P, Q, R and S. Write down the size of each. **(4)**



P: _____ Q: _____ R: _____ S: _____

3.2 Choose from: square, rectangle, rhombus, parallelogram, kite, trapezium. Write down ALL the quadrilaterals that have: **(4)**

a. four equal sides: _____

b. only one pair of parallel sides: _____

c. four right angles: _____

d. at least one pair of equal adjacent sides: _____

4 Solving problems with properties of shapes

6 marks

4.1 Answer the following. Give a reason each time. **(4)**

a. ABCD is a parallelogram with AB = 7 cm and BC = 4 cm. Write down the lengths of CD and AD.

b. PQRS is a rectangle with PQ = 9 cm and QR = 5 cm. Write down the length of RS and the size of angle R.

4.2 Triangle PQR is equilateral and PQ = 5,5 cm. How long is QR? Give a reason. **(2)**

5 Geometry of 2D shapes

8 marks

5.1 KLMN is a kite with KL = KN = 3,5 cm and LM = 6 cm. a. How long is NM? Give a reason. b. Calculate the perimeter of the kite. **(3)**

5.2 A rhombus has a side of 4,5 cm. Calculate its perimeter. **(2)**

5.3 Write ONE property next to each quadrilateral. **(3)**

Quadrilateral	One property
Square	
Parallelogram	
Trapezium	

6 Circles

5 marks

6.1 Use a compass to draw a circle with centre O and a radius of 3 cm. On your circle, draw and label: a. a diameter AB; b. a chord CD that does NOT pass through O; c. shade ONE sector. **(4)**

6.2 The radius of a circle is 4,5 cm. How long is its diameter? **(1)**

7 Quadrilaterals

5 marks

7.1 Name the three quadrilaterals below. Then give ONE property of any TWO of them. **(5)**

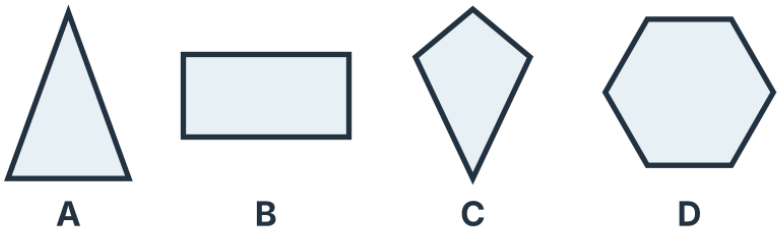


A B C

8 Lines of symmetry

2 marks

8.1 Draw ALL the lines of symmetry on shapes C and D. **(2)**



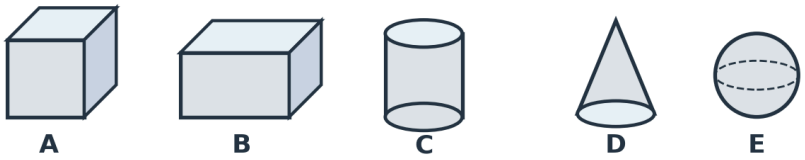
9 Transformations and 3D objects

6 marks

9.1 Write the name of the transformation next to each description. **(3)**

Description	Transformation
The shape slides without turning or flipping	
The shape turns about a point	
The shape is flipped in a mirror line	

9.2 Name the 3D objects A, C and E below. **(3)**

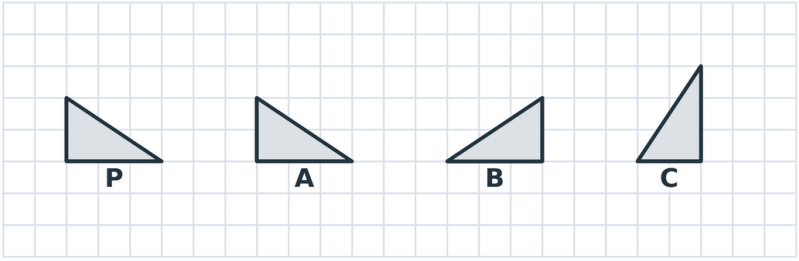


A: _____ C: _____ E: _____

10 Transformation geometry

4 marks

10.1 Triangle P has been transformed to A, B and C. Name each transformation. **(3)**



A: _____ B: _____ C: _____

10.2 Which transformation changes the SIZE of a shape? **(1)**

11 Measuring angles, the circle and 3D objects — 7 marks

11.1 Use your PROTRACTOR and draw an angle of 65°. Write the kind of angle next to it. **(2)**

11.2 Write the name of each part of the circle. **(3)**

a. The line from the centre to the edge: _____

b. The line right through the centre: _____

c. The distance around the circle: _____

11.3 What is the difference between a CUBE and a RECTANGULAR PRISM? **(2)**

12 Triangles, quadrilaterals and the circle — 12 marks

12.1 Draw a line segment PQ of 7 cm. At P, construct a line perpendicular to PQ. Then, through Q, construct a line parallel to your perpendicular line. Use a ruler and a protractor (or a set square). **(3)**

12.2 Name THREE quadrilaterals with two pairs of parallel sides. **(3)**

12.3 Write the name of each part of a circle. **(3)**

a. A straight line between two points on the circle, not through the centre: _____

b. The piece like a slice of cake, between two radii: _____

c. The piece cut off by a chord: _____

12.4 Rectangle A is 3 cm by 5 cm. Rectangle B is an enlargement of A with a factor of 3. **(3)**

a. What are the length and the width of B? _____

b. Are A and B congruent or similar? _____

c. Rectangle C is 6 cm by 8 cm. Is C an enlargement of A? Explain.

Total **74 marks**



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