

Name _____

Date _____

Stage 7 End-of-unit test 8 — mark scheme

22 questions · 39 marks · calculators are not allowed · allow about 45 minutes

- 1 What is the name of a polygon with 8 sides? [1]

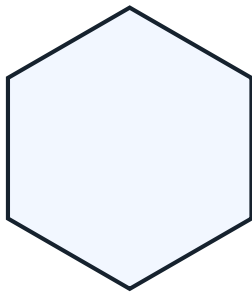
Answer: octagon

Eight sides makes an octagon.

- 2 What do the interior angles of a pentagon total, in degrees? [2]

Answer: 540 $180 \times 3 = 540^\circ$.

- 3 Each interior angle of a regular hexagon is how many degrees? [2]



regular hexagon

Answer: 120 $720 \div 6 = 120^\circ$.

- 4 Each exterior angle of a regular decagon is how many degrees? [2]

Answer: 36 $360 \div 10 = 36^\circ$.

- 5 A regular polygon has an interior angle of 150° . How many sides has it? [3]

Answer: 12Exterior 30° , and $360 \div 30 = 12$.

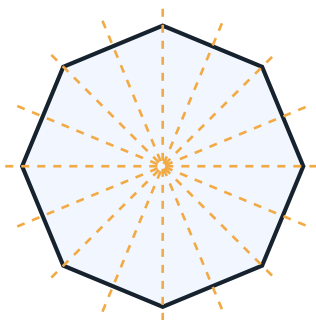
- 6 What makes a polygon regular? [2]

- ☐ All sides equal
- ☐ All angles equal
- ☐ All sides equal and all angles equal
- ☐ It has an even number of sides

Answer: All sides equal and all angles equal

A rhombus fails on angles; a rectangle fails on sides.

- 7 A circle has radius 9 cm. What is its diameter, in cm? [1]
Answer: 18
 $2 \times 9 = 18$ cm.
- 8 A circle has diameter 26 cm. What is its radius, in cm? [1]
Answer: 13
 $26 \div 2 = 13$ cm.
- 9 Which part of a circle is the distance all the way round? [1]
Answer: circumference
 That is the circumference.
- 10 How many lines of symmetry does a regular octagon have? [2]



regular octagon

- Answer: 8**
 A regular n-gon has n lines of symmetry.
- 11 What is the order of rotational symmetry of a regular pentagon? [2]
Answer: 5
 It repeats 5 times in a full turn.
- 12 How many lines of symmetry does a parallelogram have? [2]
Answer: 0
 None — no fold makes the halves match.
- 13 What is the order of rotational symmetry of a parallelogram? [2]
Answer: 2
 A 180° turn maps it onto itself.
- 14 A parallelogram has no lines of symmetry but order 2. What does that show? [2]
☐ It has no symmetry
☐ The two kinds of symmetry are independent
☐ It is not a polygon
☐ The order is wrong
Answer: The two kinds of symmetry are independent
 Check each separately.
- 15 A shape maps onto itself every 45° . What is its order? [2]
Answer: 8
 $360 \div 45 = 8$.

- 16** How many faces does a triangular prism have? [1]

Answer: 5

Two triangles and three rectangles.

- 17** How many edges does a cube have? [1]

Answer: 12

Four top, four bottom, four upright.

- 18** How many vertices does a square-based pyramid have? [2]

Answer: 5

Four round the base plus the apex.

- 19** What is a net? [1]

- ☐ A drawing of a solid
- ☐ A flat shape that folds into the solid
- ☐ The base
- ☐ The volume

Answer: A flat shape that folds into the solid

A box cut open and laid flat.

- 20** A solid has 8 faces and 12 vertices. Use Euler's rule to find the number of edges. [3]

Answer: 18

$8 + 12 - E = 2$, so $E = 18$.

- 21** A prism has a hexagonal cross-section. How many faces has it? [2]

Answer: 8

$2 + 6 = 8$.

- 22** A stop sign is a regular octagon. What is each interior angle, in degrees? [2]

Answer: 135

Exterior 45° , interior 135° .

Total: 39 marks