Polygon angle sums

6 questions | 15 marks

Equivalent correct methods earn the corresponding marks.

1. Find the interior-angle sum of a quadrilateral. [2 marks]

$(4-2)\times 180^\circ = 360^\circ$.

Answer: 360°.

2. Find each interior angle of a regular octagon. [2 marks]

The total is $(8-2)\times 180 = 1080$ degrees.

$1080 \div 8 = 135$.

Answer: 135°.

3. Find the interior-angle sum of a heptagon, which has seven sides. [2 marks]

$(7-2)\times 180^\circ = 900^\circ$.

Answer: 900°.

4. A simple polygon has interior-angle sum 1440°. How many sides does it have? [3 marks]

$(n-2)180 = 1440$.

$n-2 = 8$, so $n = 10$.

Answer: 10 sides.

5. A regular polygon has exterior angle 24°. Find its number of sides and each interior angle. [3 marks]

$360 \div 24 = 15$.

The adjacent interior angle is $180 - 24 = 156$ degrees.

Answer: 15 sides; interior angle 156°.

6. Four interior angles of a pentagon are 100, 115, 90 and 120 degrees. Find the fifth. [3 marks]

The total is 540°.

The four given angles total 425°.

$540 - 425 = 115$ degrees.

Answer: 115°.