

Interior and exterior angles of polygons

Grade 4 | Foundation and Higher | 15 questions, 53 marks

GCSE Maths topic practice



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Name: _____ **Date:** _____ **Score:** _____ / 53

- 1** A hexagon has 6 sides.
- a. Work out the sum of the interior angles of a hexagon.
 - b. Work out the size of one interior angle of a regular hexagon. (2 marks)

Answer _____

- 2** Each exterior angle of a regular polygon is 30° .
Work out the number of sides of the polygon. (2 marks)

Answer _____

- 3** Work out the size of each interior angle of a regular decagon. (3 marks)

Answer _____

- 4** Five of the exterior angles of a hexagon are 40° , 50° , 60° , 70° and 80° .
Work out the size of the sixth exterior angle. (2 marks)

Answer _____

- 5** Each interior angle of a regular polygon is 156° .
Work out the number of sides of the polygon. (3 marks)

Answer _____

- 6 In a regular polygon, each interior angle is 100° more than each exterior angle.
Work out the number of sides of the polygon.

(3 marks)

Answer _____

- 7 The interior angles of a pentagon are x° , $(x + 30)^\circ$, $(x + 40)^\circ$, $2x^\circ$ and $(2x + 50)^\circ$.
Work out the size of the largest interior angle of the pentagon.

(4 marks)

Answer _____

- 8 Each exterior angle of a regular polygon is 18° .
a. Work out how many sides the polygon has.
b. Work out the size of one interior angle.

(4 marks)

Answer _____

- 9 In a pentagon, four of the interior angles are equal.
The fifth interior angle is 60° larger than each of the equal angles.
Work out the size of the largest interior angle of the pentagon.

(4 marks)

Answer _____

- 10 ABCDEF is a hexagon.
Angle A = angle D = 90° .
The other four interior angles are all equal.
Work out the size of angle B.

(4 marks)

Answer _____

- 11 A regular pentagon and a square have the same side length.
They are joined along one common edge PQ, on opposite sides of PQ, so they do not overlap.
At the vertex P, the pentagon has an interior angle and the square has an interior angle.
Work out the size of the angle at P that is outside both the pentagon and the square.

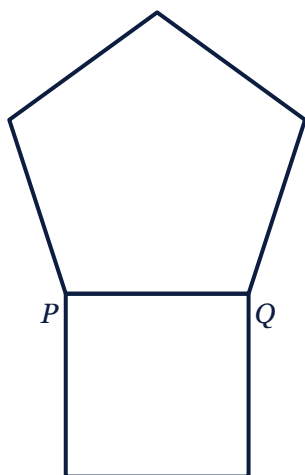


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 12 The sum of the interior angles of a polygon is 1800° .
- Work out the number of sides of the polygon.
 - The polygon is regular. Work out the size of each interior angle.

(4 marks)

Answer _____

- 13 ABCDE is a regular pentagon.
The diagonal AC is drawn.
Work out the size of angle ACD.
Give a reason for each stage of your working.

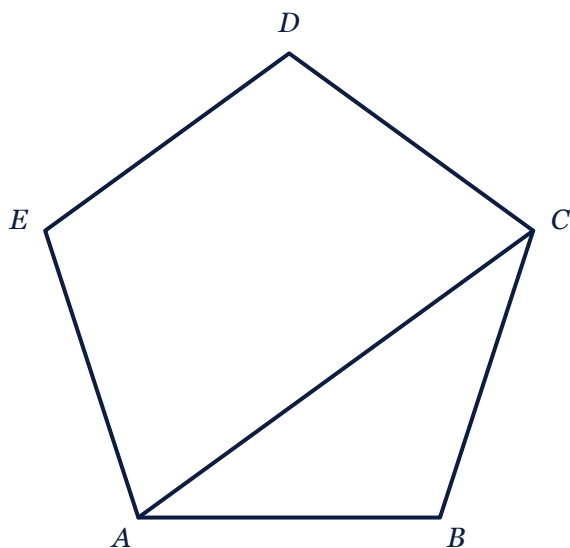


Diagram NOT accurately drawn

(4 marks)

Answer _____

14 In a regular polygon, the ratio of each interior angle to each exterior angle is 13 : 2.

- Work out the number of sides of the polygon.
- Work out the sum of the interior angles of the polygon.

(5 marks)

Answer _____

15 Regular pentagon ABCDE and regular hexagon ABFGHI have the same side length.

They share the common edge AB and lie on opposite sides of AB, so they do not overlap.

- Work out the size of angle EAI.
- Work out the size of angle AEI.

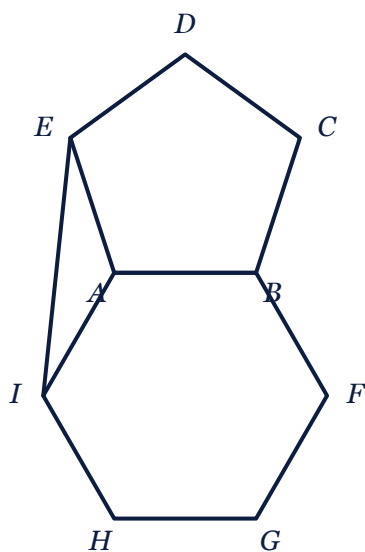


Diagram NOT accurately drawn

(5 marks)

Answer _____

End of questions | Total 53 marks