Exam Style Questions

Angles - Polygons

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
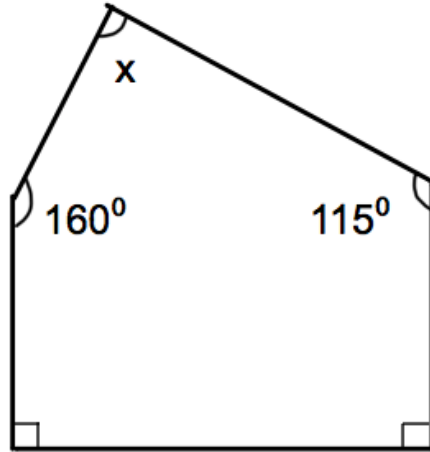4. Check your answers seem right.
5. Always show your workings

Revision for this topic

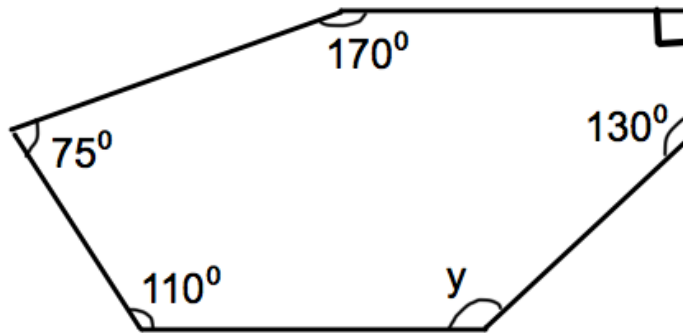www.corbettmaths.com/contents

Video 32

1.

(a) Calculate the size of angle x.

x = ...°
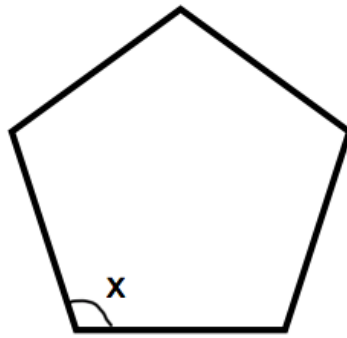
(2)

(b) Calculate the size of angle y.

y = ...°

(2)

2. Shown below is a regular pentagon.

(a) Find the size of each interior angle.

x = ...^{0}

(2)
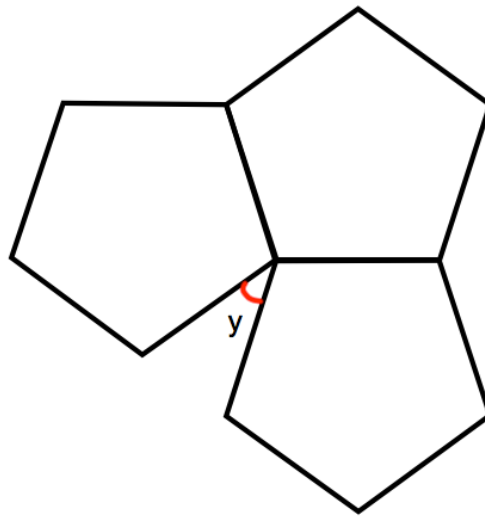
Three identical regular pentagons are joined as shown above.

(b) Work out the size of angle y.

y = ...^{0}

(2)

3. Shown below is a regular hexagon ABCDEF.

A   B

F   C

x

E   D
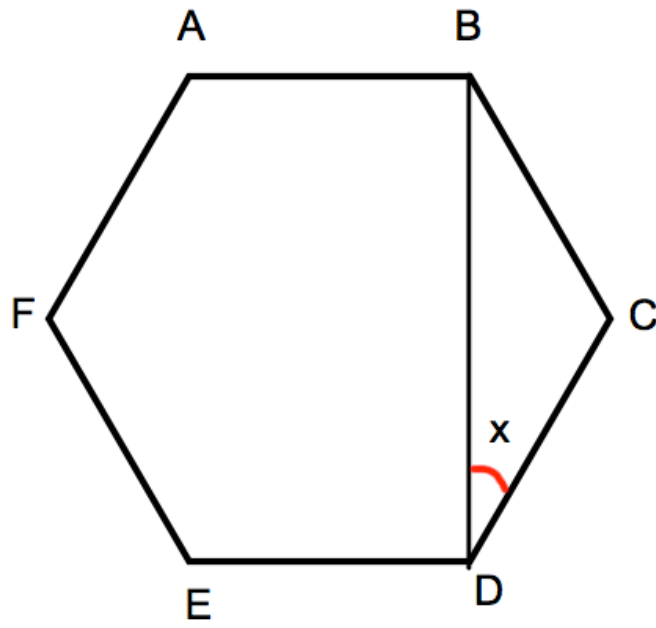
Calculate angle x.

x = ... °

(3)

4. Shown below is a regular pentagon ABCDE.
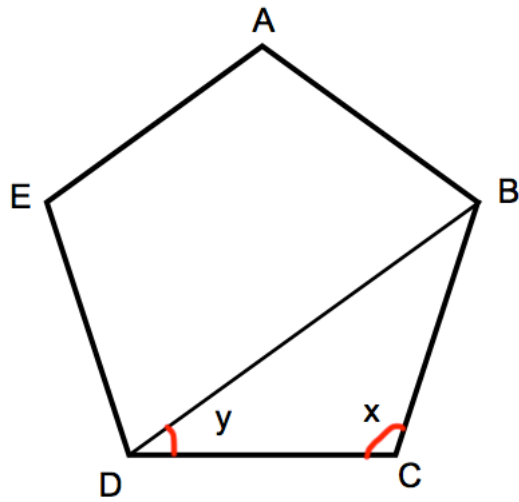
(a) Work out angle x.

x = ...°

(2)

(b) Work out angle y.

y = ...°

(2)

5.   Shown is a regular hexagon and a regular octagon.
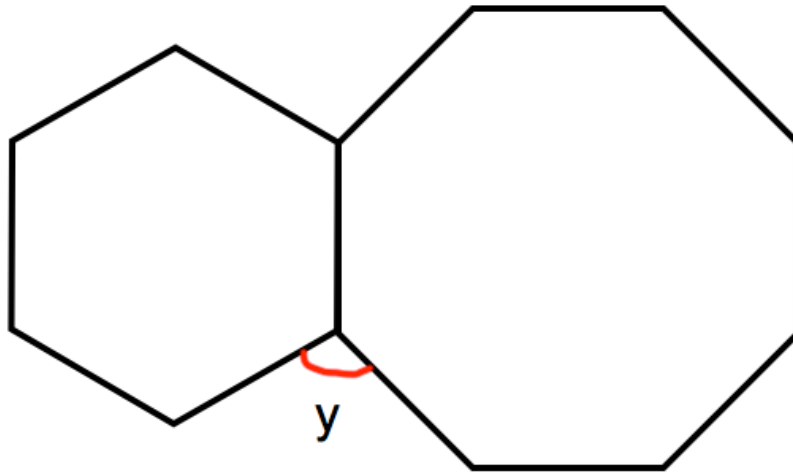
Calculate the size of angle y.

y = ...°

(3)

6.   A regular polygon has 12 sides.

Work out the size of each interior angle.

.........................°

(2)

7.
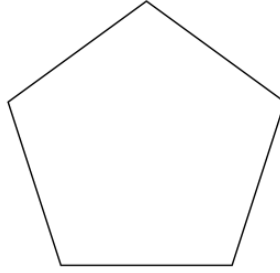
Explain why the sum of the interior angles in a regular pentagon is 540^0.

....

....

....

....
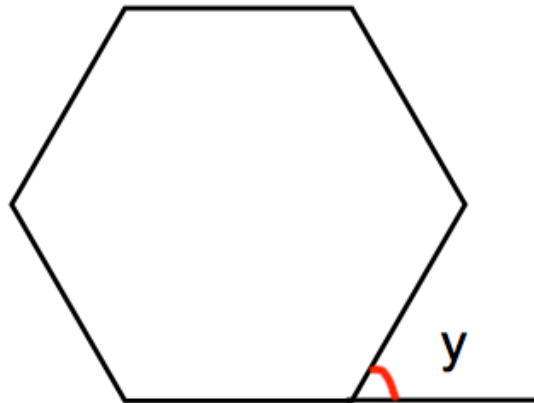
(2)

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8. Shown below is a regular hexagon, with an exterior angle labeled y.

Work out the size of each exterior angle.

y = ...^{0}

(2)

9. A regular polygon has 24 sides.

   Work out the size of each exterior angle.

   .... °

   (2)

10. Each exterior angle of a regular polygon is 20^0.

    Work out the number of sides of the polygon.

    ....

    (2)

11. Each interior angle of a regular polygon is 174^0.

    Work out the number of sides of the polygon.

    ....

    (2)

12. The interior angle of a regular polygon is 135⁰

Work out the number of sides of the polygon.

....
(2)

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13. ABCDEFGH is a regular octagon.
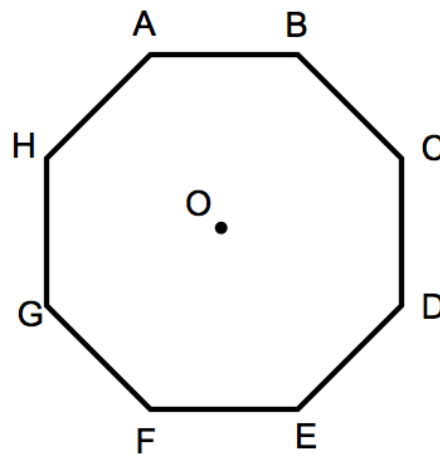
(a) Calculate the size of angle AOB.

........................°
(2)

(b) Calculate the size of angle ABC.

........................°
(2)

14. Martin has drawn a regular nonagon (9 sided polygon).

(a) What size is each exterior angle?

.... ^{0}

(2)

(b) What size is each interior angle?

.... ^{0}

(2)

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15. Shown below is an interior angle from a regular polygon.

175^0
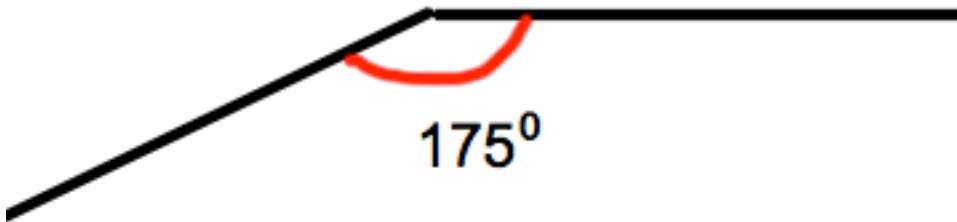
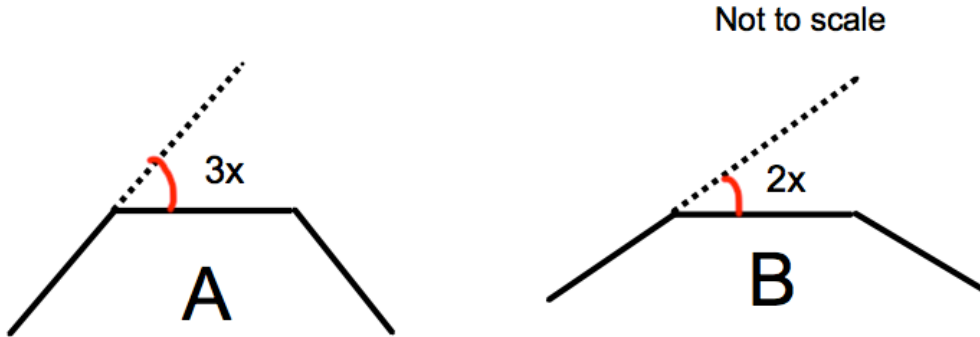Calculate the number of sides the polygon has.

....

(2)

16.   The diagram shows parts of two regular polygons A and B.

A has 10 sides and exterior angle 3x.
B has exterior angle 2x.

Not to scale

3x

A

2x

B

Work out the number of sides regular polygon B has.

....

(5)

17.   The diagram below shows part of a regular polygon.

172.5^0

(a)   Calculate the size of each exterior angle.

.... ^{0}

(1)

(b)   Calculate the number of sides the polygon has.

....

(2)

18.   Explain why a regular octagon will **not** tessellate.

(3)

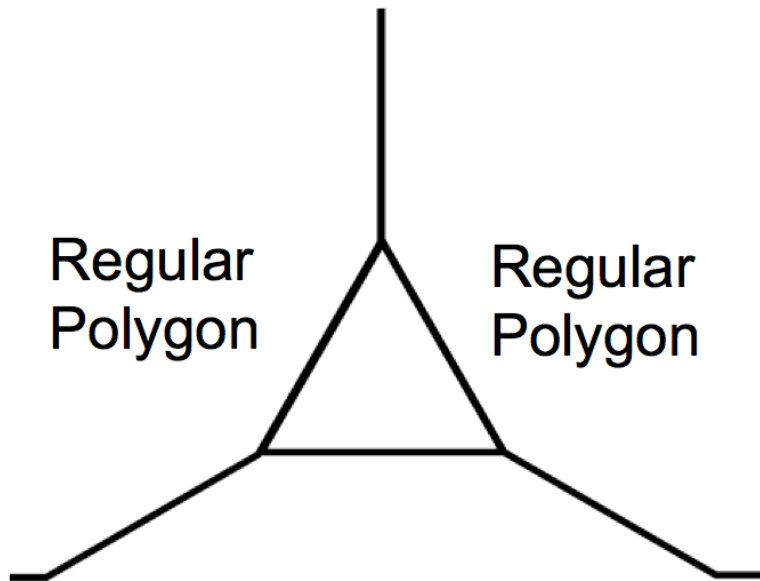19. Work out the sum of the interior angles for a 40 sided polygon.

......................°

(2)

20. The sum of the interior angles in a polygon is 7380^0.

Calculate the number of sides the polygon has.

....

(2)

21. Shown below are two identical regular polygons and an equilateral triangle.

Regular Polygon   Regular Polygon

Calculate the number of sides each regular polygon has.

....

(3)

22. A regular polygon has interior angles that are 5 times larger than each of its exterior angles.

Calculate how many sides it has.

....
(3)