1 *ABCDE* is a pentagon.

Work out the size of angle *ABC*.

....°

(Total for Question 1 is 3 marks)

1

2 *ABCDEF* is a hexagon.
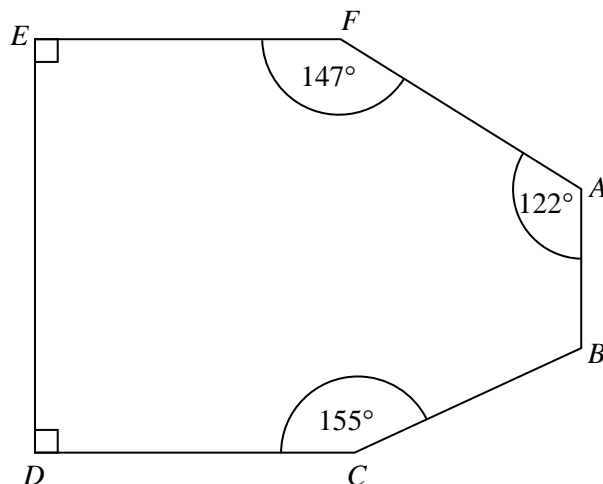
Work out the size of angle *ABC*.

3 *ABCDEF* is a hexagon.
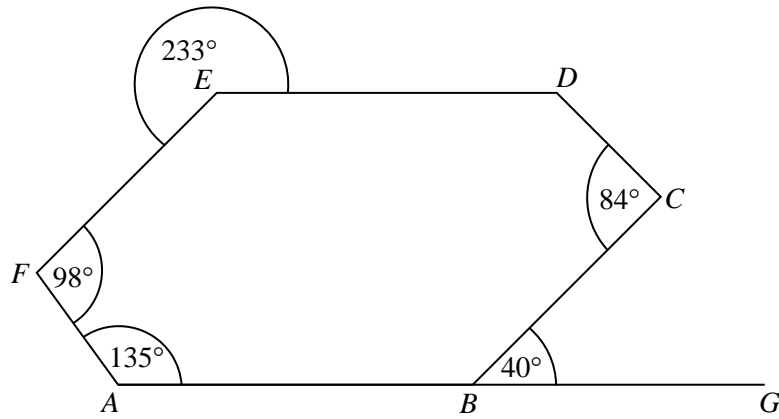
ABG is a straight line.
Work out the size of angle *CDE*.

(Total for Question 3 is 4 marks)

4 *ABCDE* is a pentagon.
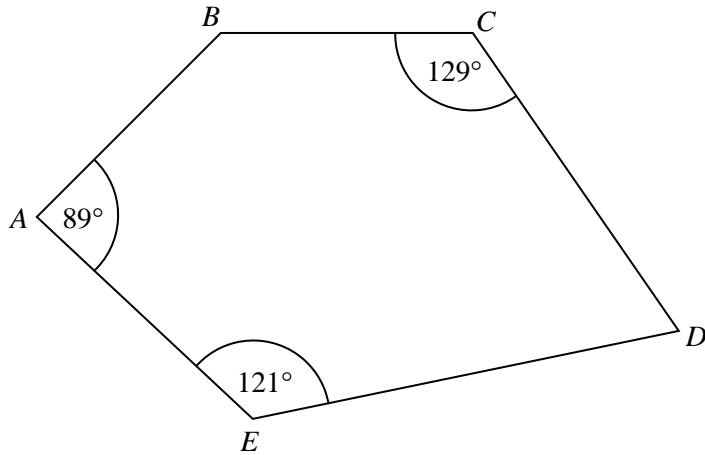
Angle *ABC* = 2 × angle *CDE*
Work out the size of angle *CDE*.

....°

(Total for Question 4 is 4 marks)

5 *ABCDEFG* is a heptagon.
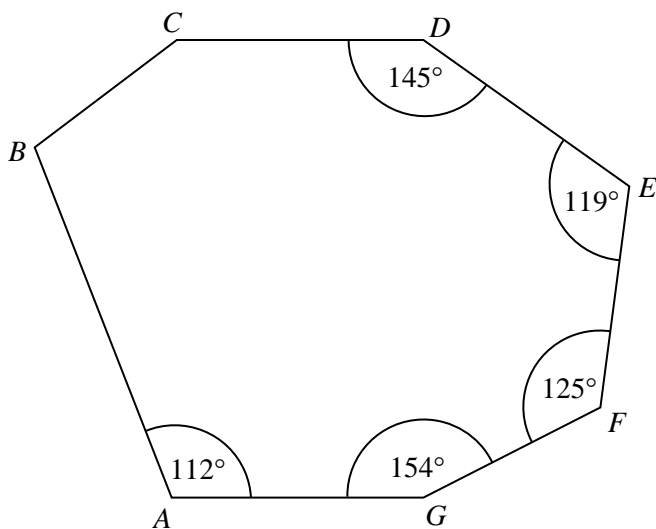
Angle *ABC* : Angle *BCD* = 3 : 4
Work out the size of angle *ABC*.

°

(Total for Question 5 is 5 marks)

6 Shape **M** is an irregular polygon with 9 sides.

8 of the interior angles of shape **M** are each equal to 150°

Work out the size of the other interior angle of shape **M**.

....°

(Total for Question 6 is 3 marks)

7 (a) Work out the size of the **exterior** angle of a regular pentagon.

....°

(2)

(b) Work out the size of the **interior** angle of a regular pentagon.

....°

(2)

(Total for Question 7 is 4 marks)

Solutions

8 (a) Work out the size of the **exterior** angle of a regular hexagon.

.... °
(2)

(b) Work out the size of the **interior** angle of a regular hexagon.

.... °
(2)

(Total for Question 8 is 4 marks)

9 (a) Work out the size of the **exterior** angle of a regular decagon.

.... °
(2)

(b) Work out the size of the **interior** angle of a regular decagon.

.... °
(2)

(Total for Question 9 is 4 marks)

Solutions

10 The interior angle of a regular polygon is 175°

Write down the size of the exterior angle of the regular polygon.

.... °

(Total for Question 10 is 1 mark)

11 The interior angle of a regular polygon is $x°$

Write down an expression, in terms of x, for the size of the exterior angle of the regular polygon.

.... °

(Total for Question 11 is 1 mark)

12 A regular icosagon has 20 sides.

Work out the sum of the interior angles of a regular icosagon.

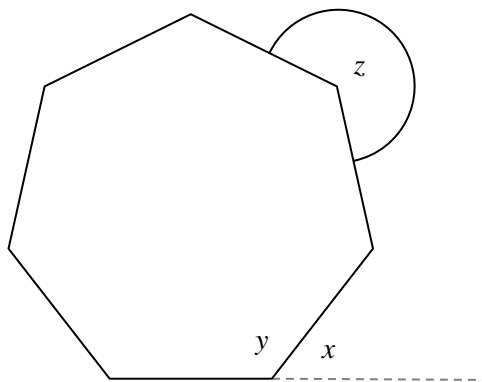... °

(Total for Question 12 is 2 marks)

13 A regular hexadecagon has 16 sides.

Show that the interior angle of a regular hexadecagon is not an integer.

(Total for Question 13 is 3 marks)

8

14 Here is a regular polygon.

(a) Work out the size of the angle marked x.
Give your answer to 1 decimal place.

.... $^{\circ}$
(2)

(b) Work out the size of the angle marked y.
Give your answer to 1 decimal place.

.... $^{\circ}$
(2)

(c) Work out the size of the angle marked z.
Give your answer to 1 decimal place.

.... $^{\circ}$
(2)

(Total for Question 14 is 6 marks)

15 Here is a regular octagon.
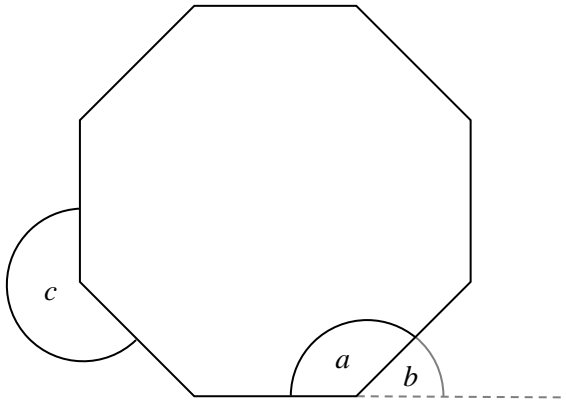
Write a number in each of the boxes below to make the statements correct.

$$a + b = \boxed{}$$

(1)

$$a + c = \boxed{}$$

(1)

$$\frac{a}{b} = \boxed{}$$

(2)

(Total for Question 15 is 4 marks)

Solutions

16 The **exterior** angle of a regular polygon is 24°

Work out the number of sides that the regular polygon has.

....

(Total for Question 16 is 2 marks)

17 The **interior** angle of a regular polygon is 162°

Work out the number of sides that the regular polygon has.

....

(Total for Question 17 is 2 marks)

18 The **exterior** angle of a regular polygon is 5°

Work out the number of sides that the regular polygon has.

....

(Total for Question 18 is 2 marks)

Solutions

19 The **interior** angle of a regular polygon is 168°

Work out the number of sides that the regular polygon has.

....

(Total for Question 19 is 2 marks)

20 The **exterior** angle of a regular polygon is 20°

Work out the number of sides that the regular polygon has.

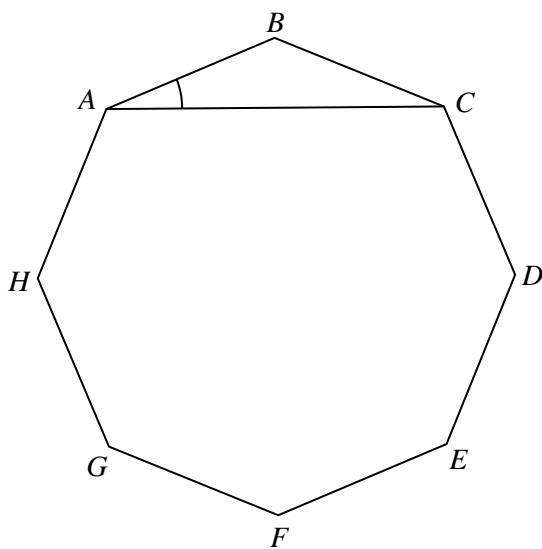...

(Total for Question 20 is 2 marks)

21 The **interior** angle of a regular polygon is 176°

Work out the number of sides that the regular polygon has.

....

(Total for Question 21 is 2 marks)

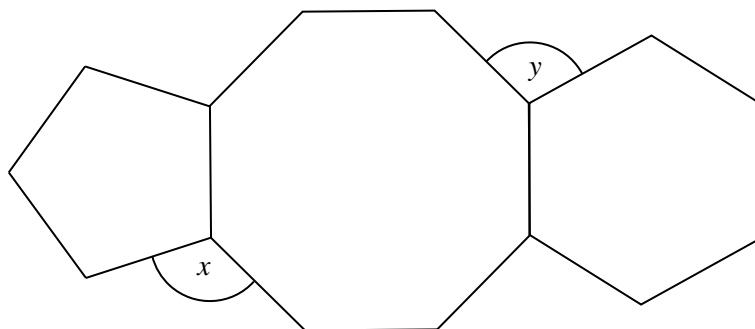**22** *ABCDEFGH* is a regular octagon.

Work out the size of angle *BAC*

(Total for Question 22 is 4 marks)

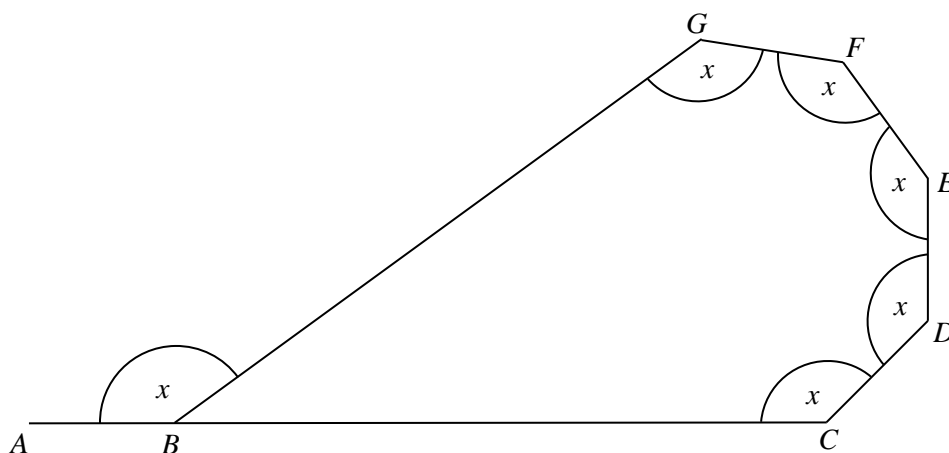**23** Here is a regular pentagon, a regular octagon and a regular hexagon.

Work out $x : y$
Give your answer in its simplest form.

(Total for Question 23 is 5 marks)

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24 *ABCDEF* is a hexagon

ABC is a straight line

Angle *ABC* = angle *BCD* = angle *CDE* = angle *DEF* = angle *EFG* = angle *FGB* = $x°$

Work out the value of x

$x =$ .... $°$

(Total for Question 24 is 4 marks)

25 Shape A is a regular polygon.

Interior angle of shape A : exterior angle of shape A = 13 : 2

Work out how many sides shape A has.

....

(Total for Question 25 is 4 marks)

26 Shape B is a regular polygon.

The interior angle of shape B is 100° greater than the exterior angle of shape B.

Work out how many sides shape B has.

....

(Total for Question 26 is 4 marks)

27 The sum of the interior angles of a regular polygon is 7740°

Work out the size of the **exterior** angle of the regular polygon.

....°
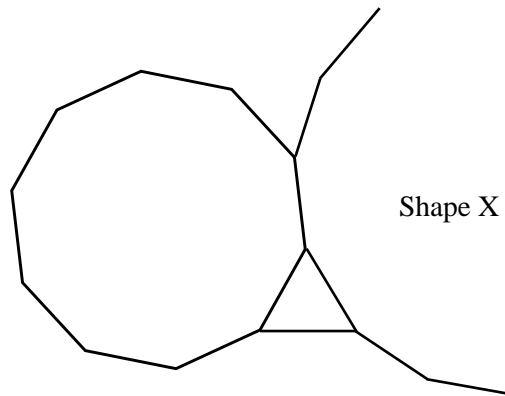
(Total for Question 27 is 4 marks)

28 The sum of the interior angles of a regular polygon is 6840°

Work out the size of the **interior** angle of the regular polygon.

....°

(Total for Question 28 is 4 marks)

17

Solutions

29 The diagram shows a regular decagon, an equilateral triangle and shape X.

Shape X

Shape X is a regular polygon.
Work out how many sides shape X has.

....

(Total for Question 29 is 4 marks)

Solutions