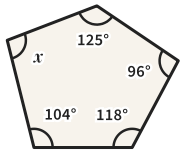
Interleaved: angles in polygons

ANSWERS

1

Find the size of angle x.



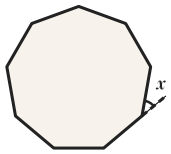
Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$(5 - 2) \times 180 = 540$, $540 - 443 = 97$

Answer 97°

2

The diagram shows a regular nonagon with one side carried on. Find the size of angle x.



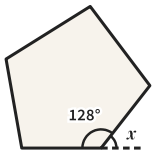
Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$360 \div 9 = 40$

Answer 40°

3

One side of this pentagon is carried on. Find the size of angle x.



Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$180 - 128 = 52$

Answer 52°

4

Part of a regular polygon is shown.
Each exterior angle is 24°. How many sides does the polygon have?



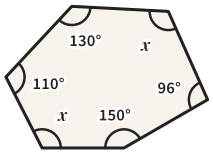
Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$360 \div 24 = 15$

Answer 15

5

Two of the angles in this hexagon are equal. Find the size of angle x.



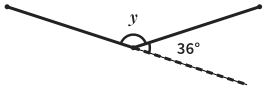
Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$720 - 486 = 234$, $234 \div 2 = 117$

Answer 117°

6

Part of a regular polygon is shown.
Each exterior angle is 36°. Find the size of angle y.



Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$180 - 36 = 144$

Answer 144°

7

The interior angles of a polygon add up to 1260°. How many sides does the polygon have?

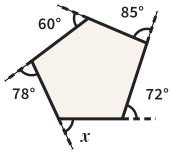
Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$1260 \div 180 = 7$, $7 + 2 = 9$

Answer 9

8

Each side of this pentagon is carried on. Find the size of angle x.



Which method? Interior angle sum | Exterior angle sum | Angles on a straight line

$72 + 85 + 60 + 78 = 295$, $360 - 295 = 65$

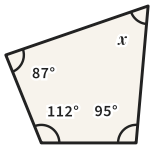
Answer 65°

Interleaved: angles in polygons *further practice*

ANSWERS

9

Find the size of angle x.



$(4 - 2) \times 180 = 360$, $360 - 294$

Answer 66°

10

A regular polygon has 20 sides.
Work out the size of each exterior angle.

$360 \div 20 = 18$

Answer 18°

11

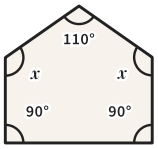
Work out the size of each interior angle of a regular polygon with 12 sides.

$360 \div 12 = 30$, $180 - 30 = 150$

Answer 150°

12

The end wall of a shed is a pentagon.
It has a right angle at each corner on the ground and an angle of 110° at the top.
The other two angles are equal.
Find one of them.



$540 - 290 = 250$, $250 \div 2 = 125$

Answer 125°

13

A robot drives in a straight line, turns 30° to the left, and does the same again and again until it is back where it started.
Its path is a regular polygon.
How many sides does it have?

the turn is the exterior angle: $360 \div 30 = 12$

Answer 12

14

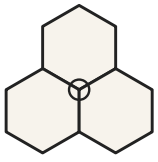
Each interior angle of a regular polygon is 140°. How many sides does the polygon have?

$180 - 140 = 40$, $360 \div 40 = 9$

Answer 9

15

A floor is tiled with regular hexagons.
Three tiles meet at each corner.
Explain why there are no gaps.

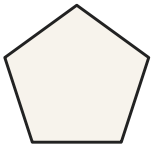


each angle $720 \div 6 = 120$, a full turn is 360

Answer $3 \times 120° = 360°$

16

Sam says each interior angle of a regular pentagon is $360 \div 5 = 72°$.
Explain his mistake and find the correct angle.



72° is the exterior angle: $180 - 72 = 108$

Answer 108°