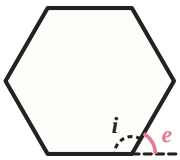
Angles in Polygons

1
A regular hexagon has 6 sides. Find (a) the exterior angle e and (b) the interior angle i.

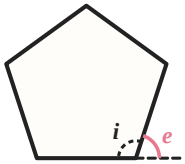


$e = 360° \div 6$

$i = 180° -$

Answer (a) (b)

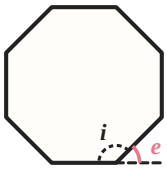
2
A regular pentagon has 5 sides.
Find (a) the exterior angle e and (b) the interior angle i.



$e = 360° \div 5$

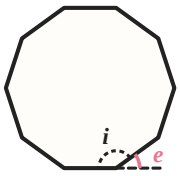
Answer (a) (b)

3
A regular octagon has 8 sides. Find (a) the exterior angle e and (b) the interior angle i.



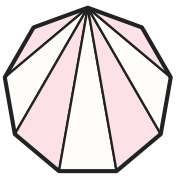
Answer (a) (b)

4
A regular decagon has 10 sides.
Find (a) the exterior angle e and (b) the interior angle i.



Answer (a) (b)

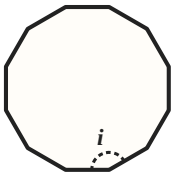
5
A regular nonagon has 9 sides. Find (a) the sum of the interior angles and (b) each interior angle.



Sum = $(9 - 2) \times 180°$

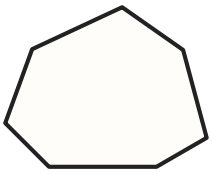
Answer (a) (b)

6
A regular dodecagon has 12 sides.
Find (a) the sum of the interior angles and (b) the interior angle i.



Answer (a) (b)

7
This heptagon has 7 sides. It is not regular.
Find the sum of its interior angles.



Answer

8
The interior angles of a polygon add up to 2160°. How many sides does the polygon have?

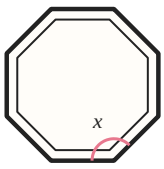
Answer

Angles in Polygons *further practice*

9
Each exterior angle of a regular polygon is 20°. How many sides does the polygon have?

Answer

10
A road sign is a regular octagon.
Find the size of angle x, one of its interior angles.

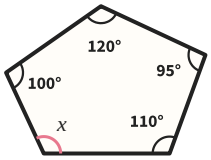


Answer

11
Each interior angle of a regular polygon is 156°. How many sides does the polygon have?

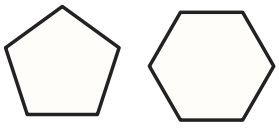
Answer

12
A pentagon is not regular. Four of its angles are 110°, 95°, 120° and 100°.
Find the size of angle x.



Answer

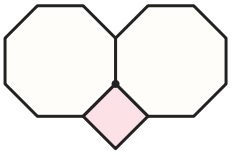
13
Which has the bigger interior angle, a regular pentagon or a regular hexagon? By how much?



pentagon hexagon

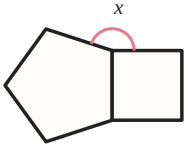
Answer

14
Floor tiles are regular octagons and squares. Two octagons and a square meet at a point. Show that they fit with no gap.



Answer

15
A regular pentagon and a square share a side. Find the size of angle x.



Answer

16
Sam says the interior angles of an octagon add up to $8 \times 180° = 1440°$.
Explain Sam's mistake.

Answer