



6-1 Additional Practice

The Polygon Angle-Sum Theorems

For Exercises 1–4, find the sum of the interior angles and the measure of each interior angle for the given regular polygons. Round to the nearest tenth as needed.

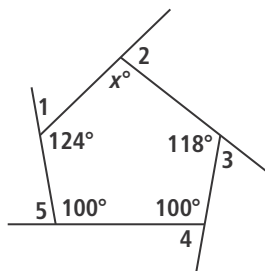
- 12-gon
- 102-gon
- 90-gon
- 36-gon

For Exercises 5–8, given the measure of an interior angle of a regular polygon, how many sides does each polygon have?

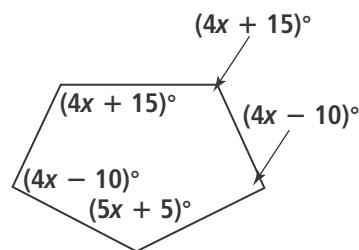
- 174°
- 156°
- 165°
- 177.5°

For Exercises 9–12, given the measure of an exterior angle of a regular polygon, how many sides does the polygon have?

- 12°
- 45°
- 18°
- 14.4°
- What is the measure of each exterior angle?
- What is the value of x ?



$$\begin{aligned} m\angle 1 &= \\ m\angle 2 &= \\ m\angle 3 &= \\ m\angle 4 &= \\ m\angle 5 &= \end{aligned}$$



- Understand** Why is the sum of the interior angles of a polygon always a multiple of 180?

- Apply** Archeologists discover four outer walls of an ancient building, as shown. If the missing walls are the same lengths as the discovered walls, how many sides did the original building have? Explain.

