Answer Key · Lesson 6.1: Angles of Polygons

School Launch · Geometry · Unit 6 · Worksheet A · for the parent

Key

1. 3060°; 161.1°

Find the sum of the interior angles of a 19-gon and each interior angle if it is regular (nearest tenth).

2. 1800°; 150°

Find the sum of the interior angles of a 12-gon and each interior angle if it is regular (nearest tenth).

3. 2340°; 156°

Find the sum of the interior angles of a 15-gon and each interior angle if it is regular (nearest tenth).

4. 8 sides; 135°

1. $n = \dfrac{360}{45} = 8$
2. Interior $= 180^\circ - 45^\circ = 135^\circ$

Each exterior angle of a regular polygon measures 45°. How many sides does it have, and what is each interior angle?

5. 360 sides; 179°

1. Exterior angles of any convex polygon sum to 360°.
2. Interior + exterior $= 180^\circ$.

Each exterior angle of a regular polygon measures 1°. How many sides does it have, and what is each interior angle?

6. 6 sides; 120°

1. $n = \dfrac{360}{60} = 6$
2. Interior $= 180^\circ - 60^\circ = 120^\circ$

Each exterior angle of a regular polygon measures 60°. How many sides does it have, and what is each interior angle?

7. 40 sides; 171°

1. $n = \dfrac{360}{9} = 40$
2. Interior $= 180^\circ - 9^\circ = 171^\circ$

Each exterior angle of a regular polygon measures 9°. How many sides does it have, and what is each interior angle?

8. 45 sides; 172°

1. $n = \dfrac{360}{8} = 45$
2. Interior $= 180^\circ - 8^\circ = 172^\circ$

Each exterior angle of a regular polygon measures 8°. How many sides does it have, and what is each interior angle?

9. 180 sides; 178°

1. Exterior angles of any convex polygon sum to 360°.
2. Interior + exterior $= 180^\circ$.

Each exterior angle of a regular polygon measures 2°. How many sides does it have, and what is each interior angle?

10. 72 sides; 175°

1. $n = \dfrac{360}{5} = 72$
2. Interior $= 180^\circ - 5^\circ = 175^\circ$

Each exterior angle of a regular polygon measures 5°. How many sides does it have, and what is each interior angle?