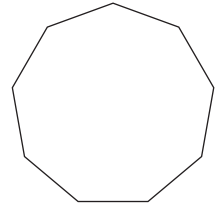
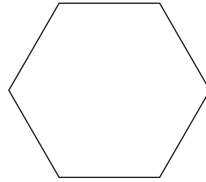
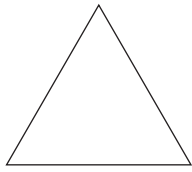
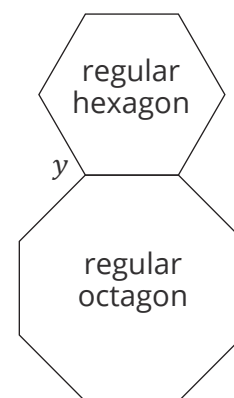
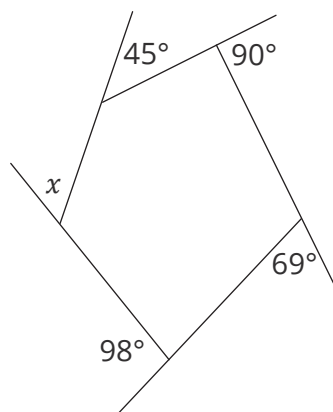


Polygons Exterior Angles

1. By extending the sides of these shapes, produce all of the exterior angles. You should have 18 exterior angles. Measure each and label the angle with its size. What is the sum of the exterior angles in the equilateral triangle? What about the hexagon and the nonagon? What do you notice?



2. What is the size of an exterior angle of a regular octagon?
Use this information to find the size of an interior angle in a regular octagon.
3. What is the size of an exterior angle of a regular decagon?
Use this information to find the size of an interior angle in a regular decagon.
4. A regular polygon has exterior angles of 30° . How many sides does it have?
What is the size of each interior angle in this polygon?
5. A regular polygon has interior angles of 170° . How many sides does it have?
6. Find the value of x and y .



7. Draw a regular hexagon with sides of length 4cm using a protractor, ruler and your knowledge of exterior angles in a hexagon. Do not erase your construction lines.

Polygons Exterior Angles **Answers**

1. In each polygon, the sum of the exterior angles is 360° .
2. 45°
 135°
3. 36°
 144°
4. 12 sides
 150°
5. 36 sides
6. 58°
 105°
7. Various methods are possible, e.g. students may use 60° exterior angles or they may calculate and use the interior angles.