Name _____

Learning Target: Find and estimate perimeters of polygons and curved shapes.

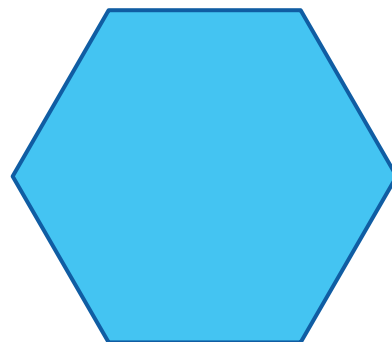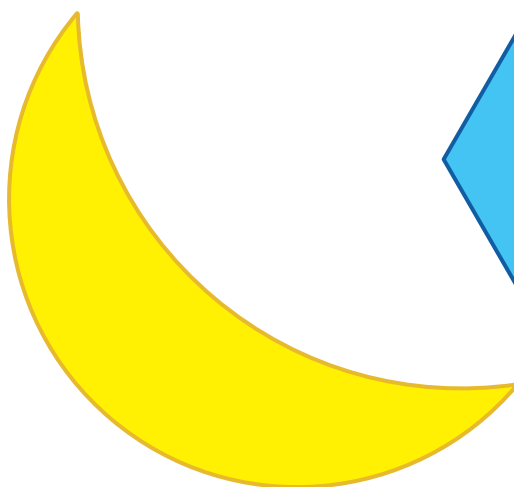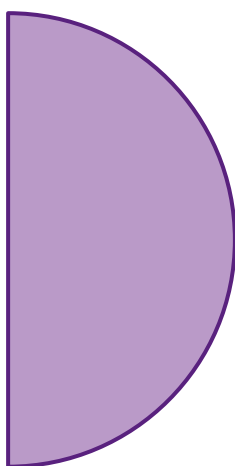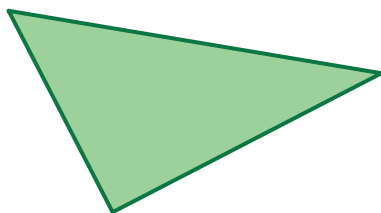**Success Criteria:**
- I can find perimeters of polygons.
- I can estimate perimeters of curved shapes.

Explore and Grow

Choose a measurement tool. Estimate the perimeter of each shape. Explain how you found each answer.

Measurement Tools
- Grid paper
- Ruler
- String

MP **Precision** Draw a curved shape that has a perimeter of about 6 inches. Explain why 6 inches is a reasonable estimate for the perimeter.
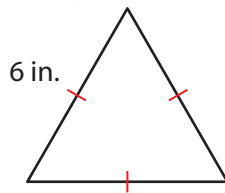
You can also multiply to find the perimeter.
$3 \times 6 = 18$ in.

Example Find the perimeter of the equilateral triangle.

$P = \underline{\hphantom{000}} + \underline{\hphantom{000}} + \underline{\hphantom{000}}$
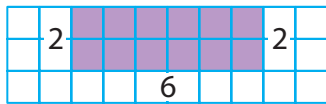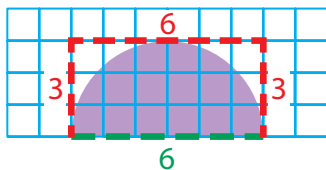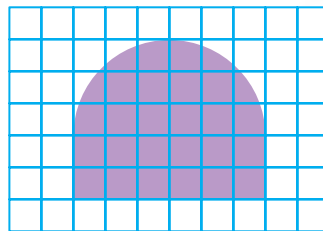
$= \underline{\hphantom{000}}$

The perimeter is _____ .

6 in.

Example Estimate the perimeter of the shape.

The shape consists of a rectangle and half of a circle. The border consists of three line segments and one curve.
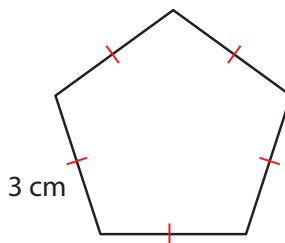
Estimate the length of the curve.

6
3   3
6

2   2
6

The curve is longer than 6 units, but shorter than $3 + 6 + 3 = 12$ units. So, you can estimate that

the length of the curve is about _____ units.

The lengths of the three line segments are

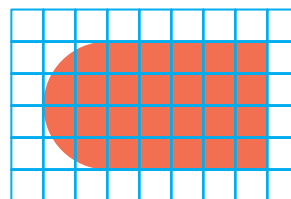_____ , _____ , and _____ units.

So, the perimeter is about _____ + _____ + _____ + _____ = _____ units.

Show and Grow

1. Find the perimeter of the polygon.

3 cm

2. Estimate the perimeter of the shape.

Apply and Grow: Practice
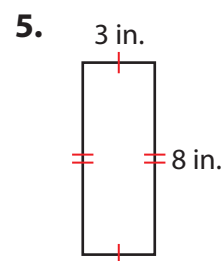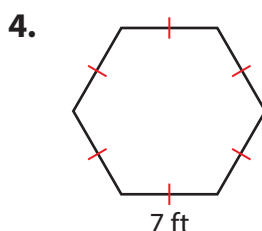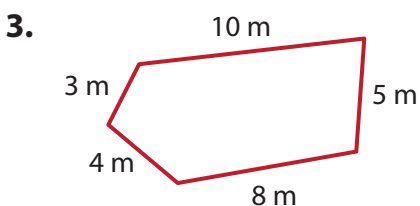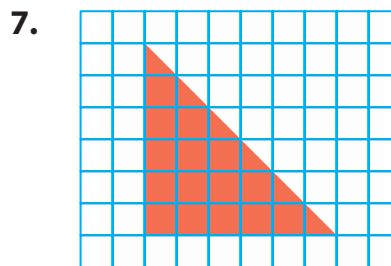
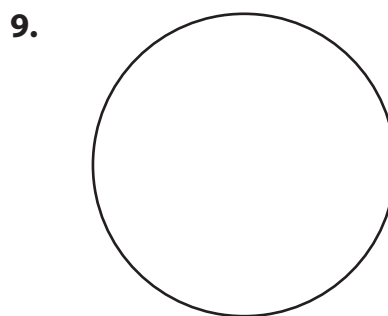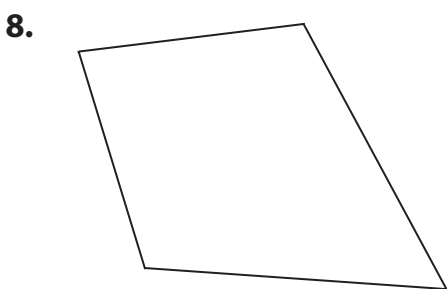Find the perimeter of the polygon.

3.
10 m
3 m
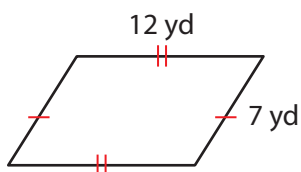5 m
4 m
8 m

4.
7 ft

5.
3 in.
8 in.

Estimate the perimeter of the shape.

6.

7.
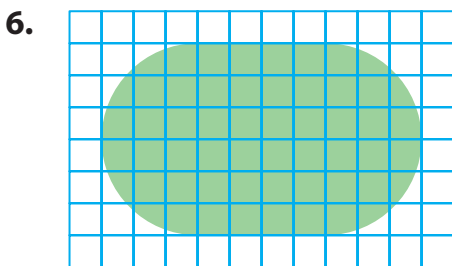
MP Choose Tools Use a ruler or string to estimate the perimeter of the shape in centimeters.

8.

9.

10. **MP Precision** Classify the polygon in as many ways as possible. Then find its perimeter.

12 yd
7 yd

11. **Writing** Tell how you can estimate the perimeter of the shape. Explain.

Think and Grow: Modeling Real Life

Example Each centimeter in the drawing of the lake represents 100 meters. Estimate the perimeter of the actual lake.

One way to estimate the perimeter of the drawing of the lake is to use a ruler. Draw line segments around the drawing of the lake that will give you a reasonable perimeter.
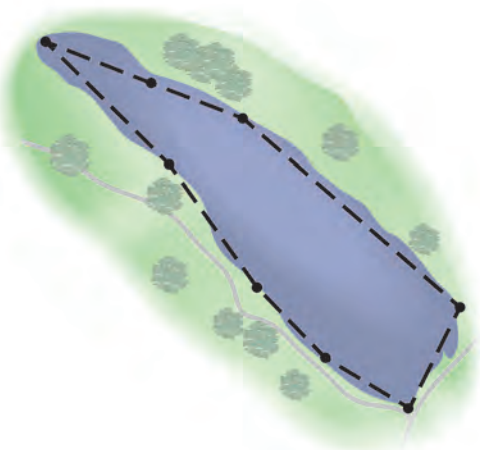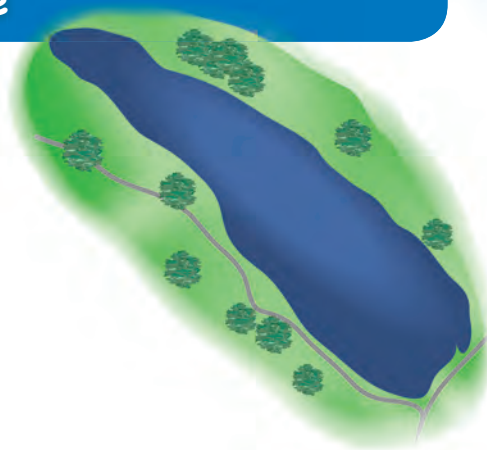
Find the sum of the lengths of the line segments.

_____ + _____ + _____ + _____ +

_____ + _____ + _____ + _____ = _____

So, the perimeter of the actual lake is about 100 × _____ = _____ meters.

Show and Grow

12. Each centimeter in the drawing of the national forest represents 10 kilometers. Estimate the perimeter of the actual national forest.
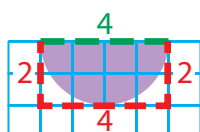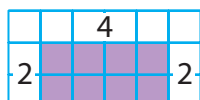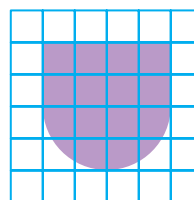
13. **DIG DEEPER!** How could you get a better estimate?

Name _____

Learning Target: Find and estimate perimeters of polygons and curved shapes.

Example Estimate the perimeter of the shape.

The shape consists of a rectangle and half of a circle. The border consists of three line segments and one curve.

The lengths of the three line segments are
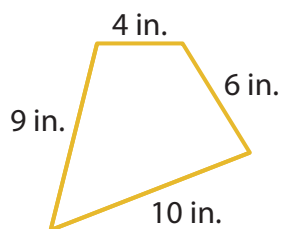
___2___ , ___4___ , and ___2___ units.

The curve is longer than 4 units, but shorter than $2 + 4 + 2 = 8$ units. So, you can estimate that
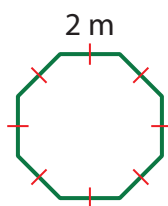
the length of the curve is about ___6___ units.

So, the perimeter is about ___2___ + ___4___ + ___2___ + ___6___ = ___14___ units.

Find the perimeter of the polygon.

1.
4 in.
6 in.
9 in.
10 in.

2.
2 m

3.
7 cm
4 cm

Estimate the perimeter of the shape.

4.

5.
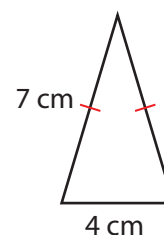
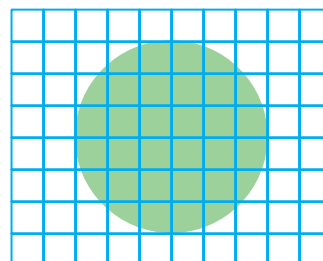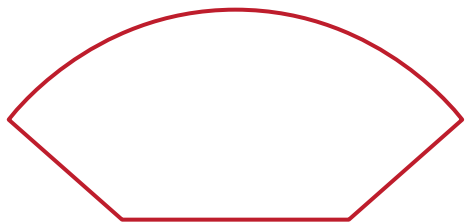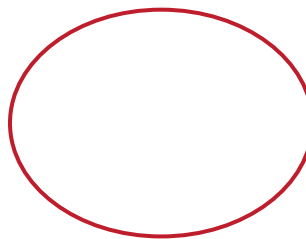Find and Estimate Perimeters
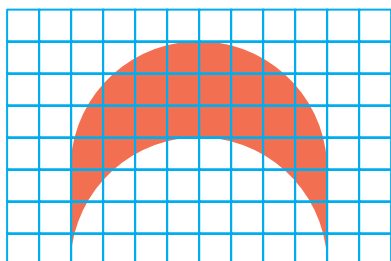
Estimate the perimeter of the shape in centimeters. Then explain why your estimate is reasonable.
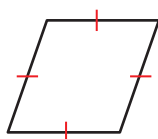
6.

7.

8. **MP Precision** Classify the polygon in as many ways as possible. Then find its perimeter.
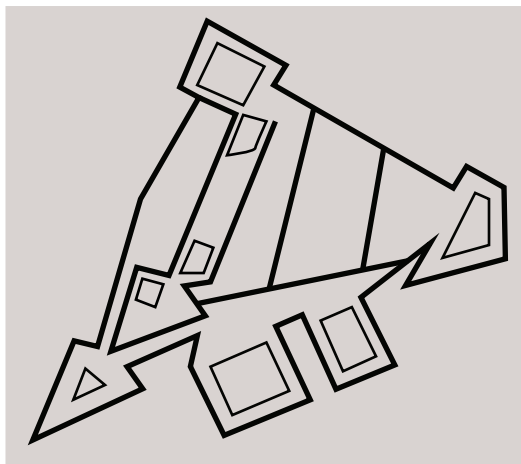

35 mm

9. **Modeling Real Life** Each centimeter in the drawing of the island represents 100 kilometers. Estimate the perimeter of the actual island.
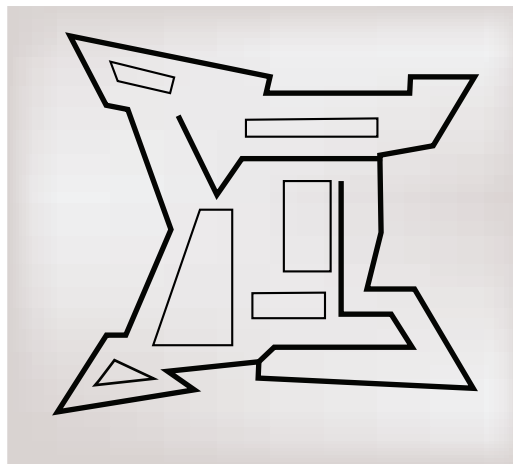

10. **DIG DEEPER!** Newton and Descartes make drawings of their forts. Each centimeter in the drawings represents 10 meters. Whose actual fort has a greater perimeter? about how much greater? Explain.

Newton's fort

Descartes's fort

Review & Refresh

Estimate the quotient.

11. $15.8 \div 4$

12. $70.4 \div 6.2$