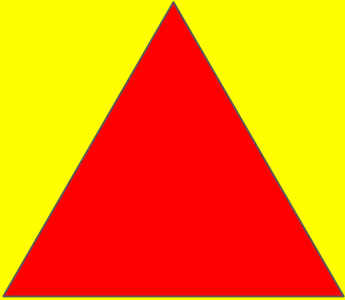Determine the perimeter of regular polygons and rectangles when whole number measurements are unknown

Warm up
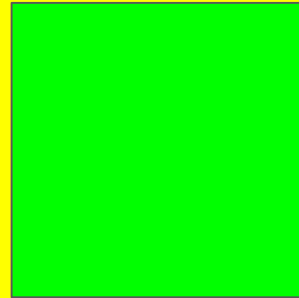
Multiply by 8 pattern sheet -

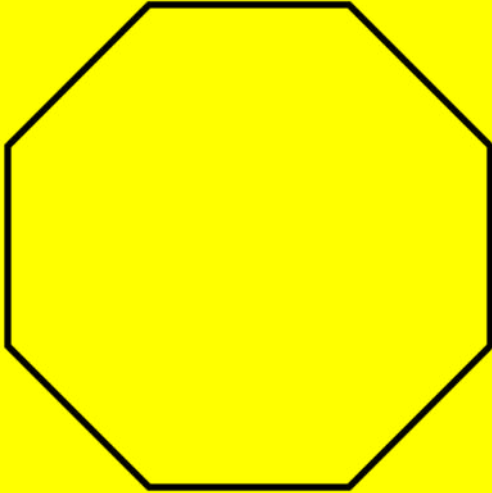# What is a regular polygon?

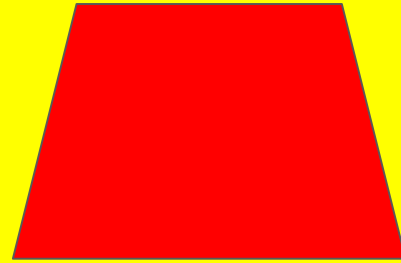Here is one

Here is another

Is this one? Why or why not?

A regular polygon is…..

A shape that has the same side lengths and the same angles. So this is a regular polygon -

This shape is not a regular polygon

Application Problem 5 minutes

A rectangular sheep pen measures 5 meters long and 9 meters wide. The perimeter of the cow pen is double the perimeter of the sheep pen. What is the perimeter of the cow pen?

Note: The Application Problem reviews Lesson 13 in solving perimeter word problems with given side lengths.
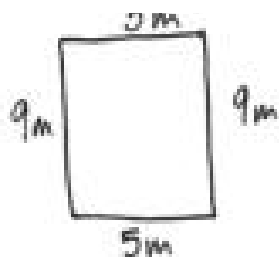
$P = 5m + 5m + 9m + 9m$

$= 10 m + 18 m$

$= 28 m$

Cow pen:

$P = 28 m + 28 m$

$= 56 m$

The perimeter of the cow pen is 56 meters.

You can find the perimeter of rectangles even when you don't know all of the side lengths-

Turn and Talk. What are some attributes of rectangles.

A rectangle has 2 sets of parallel lines.

It has a short side and a long side.

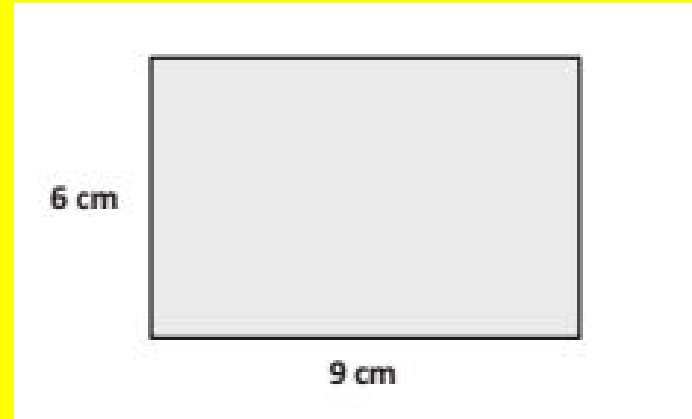The long sides are the same length, and so are the short sides.

Find the area of a rectangle when not all of the sides are labeled.
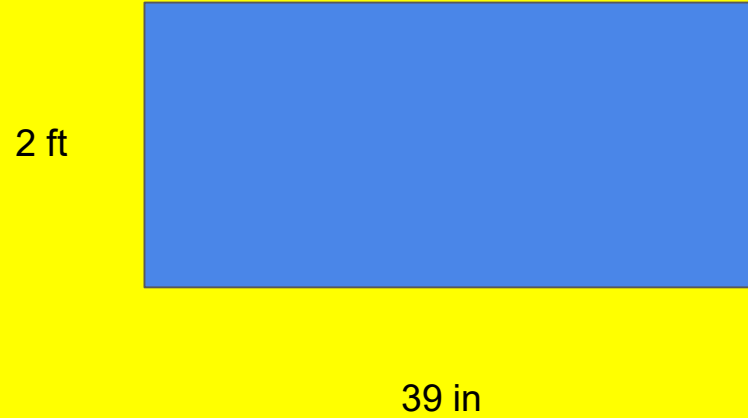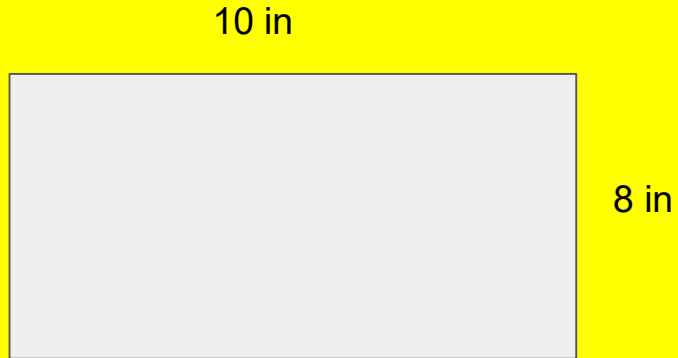
Start with what you know.

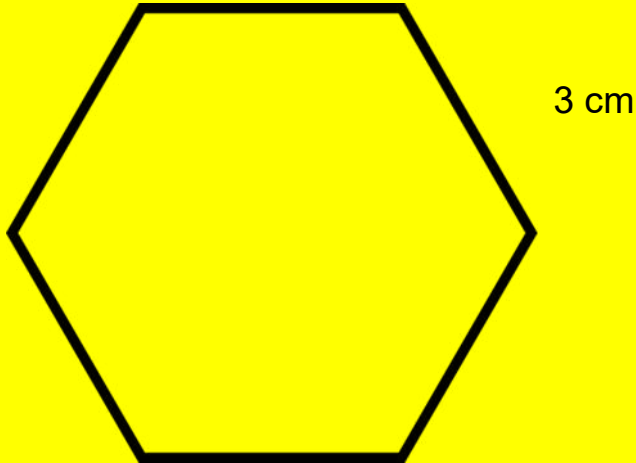Then remember to add the sides that aren't

Labeled.

6 + 9 + 6 + 9

Calculate the area of these rectangles -

10 in

8 in

2 ft

39 in

What about regular polygons -

Remember - regular polygons have the same side measurement and the same angle measurement. If a shape has only one side labeled and you are asked to calculate the perimeter, check and see if it is a regular polygon.

3 cm

How can I calculate the perimeter of this shape?

Is there another operation I could use besides addition?

Problem set - [10 minutes](#)