

# Things to Know about Triangles

Draw 5 (or more) triangles. Make them all different from each other.

Compare the sides.  
Compare the angles.  
What do you notice?

**In every triangle:**

The biggest angle is always \_\_\_\_\_.

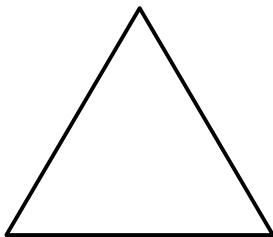
The shortest side is always \_\_\_\_\_.

**Make a prediction:**

If two sides are equal, then \_\_\_\_\_.

If two angles are equal, then \_\_\_\_\_.

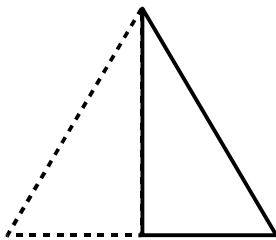
(You will learn how to prove all these statements when you study geometry in high school.)



Equilateral  $\iff$  Equiangular

side = side = side

angles = \_\_\_\_\_ each  
(How do you know?)



Cut the equilateral triangle in half.  
What kind of triangle does this make? \_\_\_\_\_  
(How do you know?)

**Label everything you know about the half-equilateral triangle.**  
[Hint: Let the original triangle's sides = 2 units each.]

The half-equilateral triangle has a special name. We call it the \_\_\_\_\_ triangle.

**How can you find the height of this triangle?**

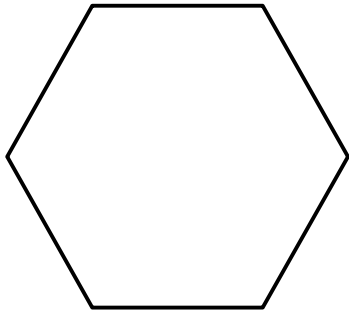
Whenever you know two sides of a right triangle,  
you can always find the third side by using the...

**Pythagorean Theorem:**

$$a^2 + b^2 = c^2$$

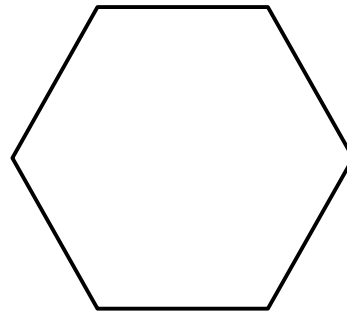
$$\text{leg}^2 + \text{leg}^2 = \text{hypotenuse}^2$$

# Things to Know about Hexagons



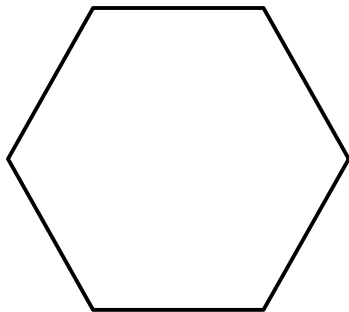
How many equilateral triangles fit?  
Draw them in.

An equilateral triangle is \_\_\_\_\_ of a hexagon.



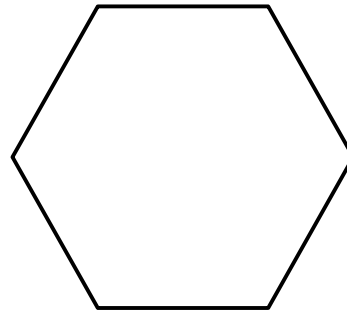
How many rhombuses fit?  
Draw them in.

The rhombus is \_\_\_\_\_ of a hexagon.



How many isosceles trapezoids fit?  
Draw them in.

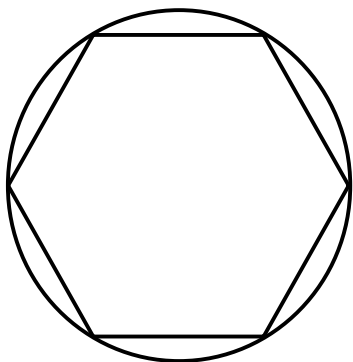
The trapezoid is \_\_\_\_\_ of a hexagon.



Can you figure out how tall the  
hexagon is?

If the *side* = 2 units, then  $h =$  \_\_\_\_\_.

[Hint: Think about the height  
of the equilateral triangles.]



A regular hexagon can always be *inscribed* in a circle.

That means all the corners of the hexagon sit on the circle.

Mark the center of the circle.

Draw a line from the center to one of the hexagon's corners.

How does the side of the hexagon compare to this radius?