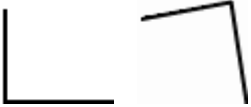
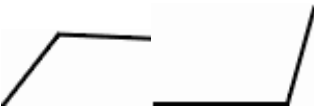

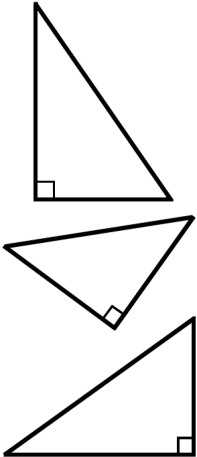
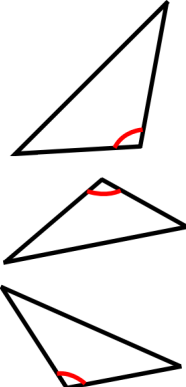
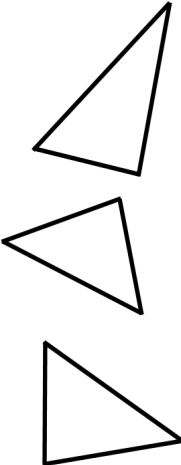


Triangles

 <p>right angles (exactly 90°)</p>	 <p>obtuse angles (more than 90°, less than 180°)</p>	 <p>acute angles (less than 90°)</p>
 <p><u>Right triangles</u> have exactly one right angle.</p>	 <p><u>Obtuse triangles</u> have exactly one obtuse angle.</p>	 <p><u>Acute triangles</u> have three acute angles. In other words, ALL the angles are acute.</p>

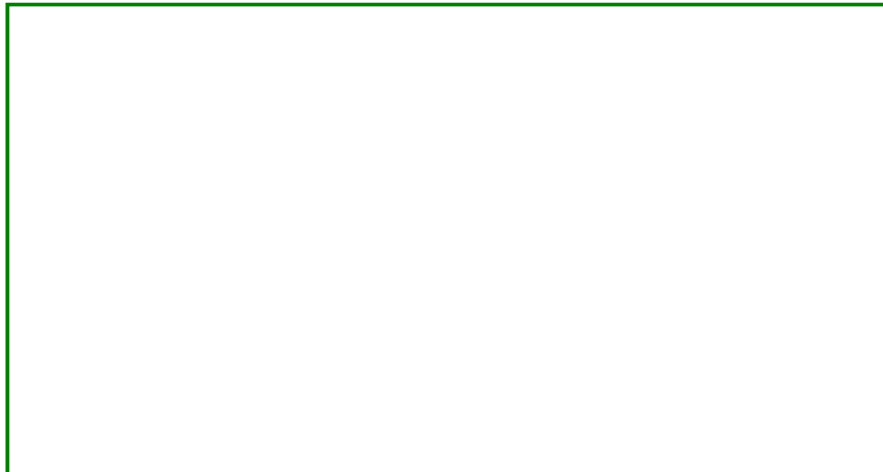
1. **a.** Draw a right angle.
Then make it into a right triangle by drawing in the third side.
- b.** Draw two more right triangles with different sizes or positions.
You can use a notebook.
- c.** Measure all the angles in all three triangles.
Are those angles acute, right, or obtuse?
- d.** What is the sum of the angles within each triangle?

A right triangle has one right angle. The other two angles are _____.

2. **a.** Draw an obtuse angle.
Then make it into an obtuse triangle by drawing in the third side.



- b.** Draw two more obtuse triangles with different sizes or positions.



- c.** Then measure all the angles in all three triangles.
Are those angles acute, right, or obtuse?

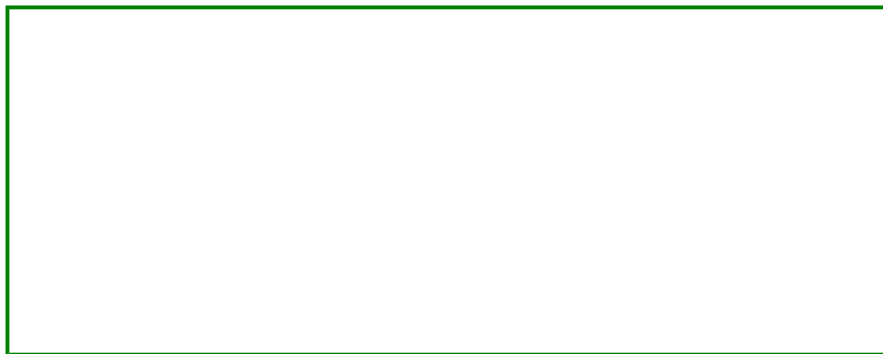
- d.** What is the sum of the angles within each triangle?

An obtuse triangle has one obtuse angle. The other two angles are _____.

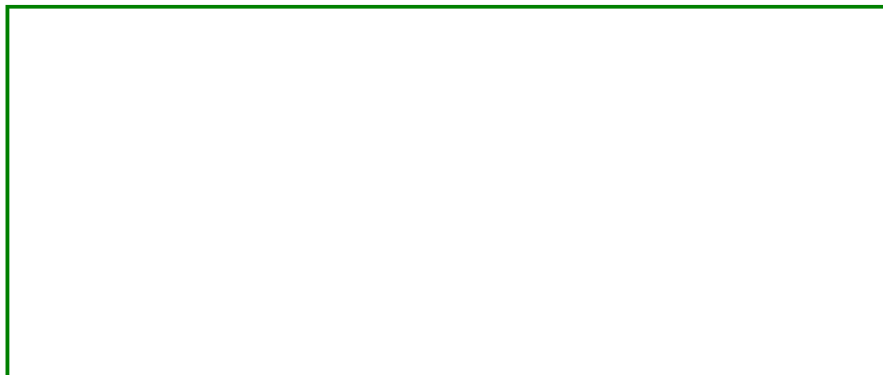
3. **a.** Draw a triangle with one 60° angle and another 40° angle. You can decide the length of the sides.
Hint: start out by drawing a 60° angle.
- b.** Measure the third angle.
It is _____ degrees.
- c.** What kind of triangle did you get (acute, right, obtuse)?



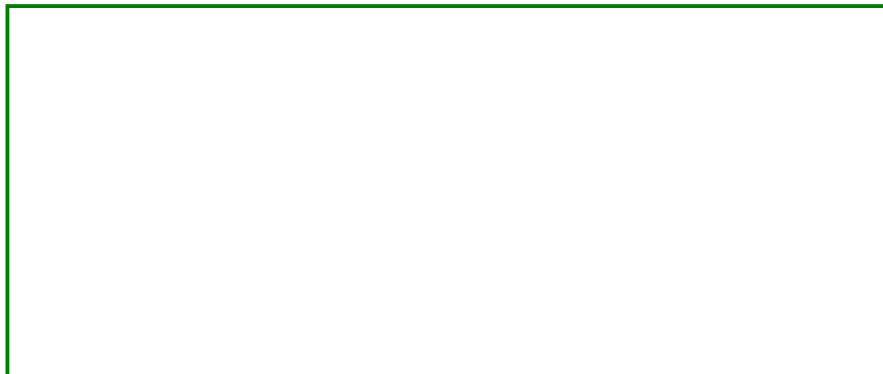
4. **a.** Draw a triangle with one 55° angle and another 35° angle.
- b.** Measure the third angle.
It is _____ degrees.
- c.** What kind of triangle did you get (acute, right, obtuse)?



5. a. Draw a triangle whose one angle is 85° and the other angle is 40° .
- b. Measure the third angle: it is _____ $^\circ$.
- c. What kind of triangle did you get (acute, right, obtuse)?



6. a. Draw a triangle whose one angle is 125° and the other angle is 40° .
- b. Measure the third angle. It is _____ degrees.
- c. What kind of triangle did you get (acute, right, obtuse)?



7. Observe all you have done thus far in this lesson, and fill in.

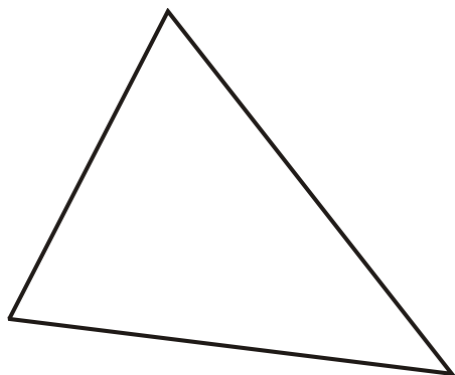
Right triangles have exactly 1 _____.

Obtuse triangles have exactly 1 _____.

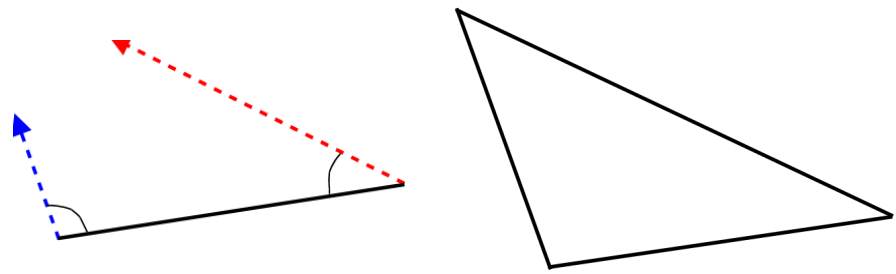
Acute triangles have _____ angles. ALL the angles are _____.

8. Draw a rectangle, and one diagonal in it.
What kind of triangles are formed?

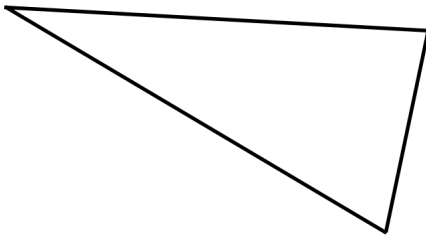
9. Measure some (or all) angles and some (or all) sides of this triangle and then copy the triangle. Your triangle should match exactly with this triangle if they were placed on top of each other.



These two pictures illustrate how it is ENOUGH to measure just two angles and the side *between* them to copy a triangle. In other words, you don't have to know all the angles and sides to copy the triangle.



10. Draw a copy of this triangle. Your triangle should match this triangle exactly if they were placed on top of each other.

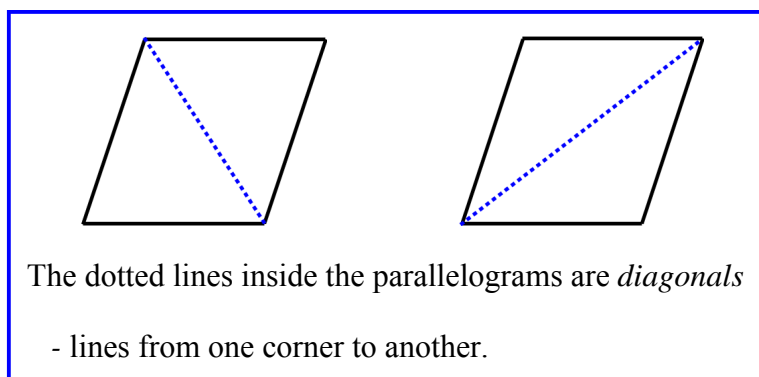


11. Think what parts you would need to measure from this parallelogram to be able to copy it. Measure those parts, and use that information to draw a copy of it.



12. **a.** Draw a triangle that has a 25° angle, a 115° angle, and a side of 3 inches between those angles.
- b.** Draw a triangle that has a 67° angle, a 75° angle, and a side of 2 inches between those angles.

13. **a.** Draw any parallelogram that is not a rectangle.
- b.** Then draw another copy of it so that you now have two identical parallelograms.
- c.** Now draw a diagonal into it. That forms two triangles. What kind of triangles are they? (acute, right, obtuse)
- d.** Draw the other diagonal into the second parallelogram. What kind of triangles did you get now? (acute, right, obtuse)



New Terms

- *an acute triangle*
- *a right triangle*
- *an obtuse triangle*
- *diagonal*