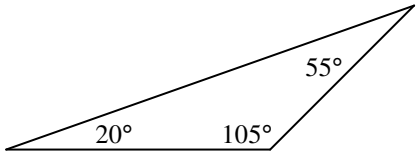
Geometry Name: _____ Date: _____
Chapter 4 Practice Test Block: 1 2 3 4 5 6 7 8

Not all triangles are drawn to scale.

_____ 1. The given triangle would be classified as _____ .

A] Scalene B] Isosceles

C] Equilateral D] none



_____ 2. The given triangle would be classified as _____ .

A] Isosceles B] Scalene

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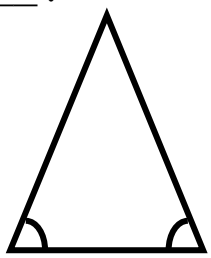
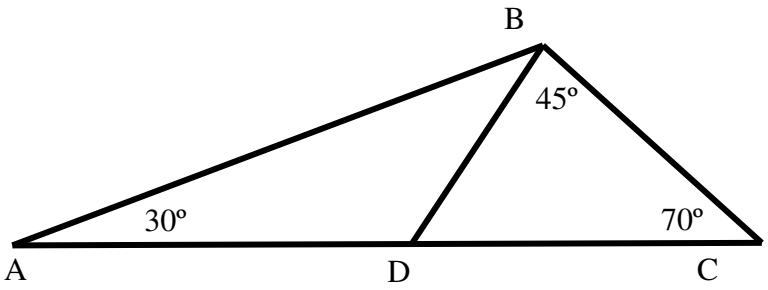


_____ 3. Find the missing angles. Then, classify each triangle by it's angles.



A] ΔBDC B] ΔADB C] ΔABC

_____ 4. Complete the statement using one of the following words:
Always, Sometimes or *Never*.

"An isosceles triangle is _____ an obtuse triangle."

Include a drawing to support your answer to #4.

_____ 5. How many obtuse angles can an isosceles triangle have?
Explain how you know.

_____ 6. What must be true in order for $\Delta ABC \cong \Delta EDC$ by AAS?

A] $\overline{AC} \cong \overline{CE}$ B] $\angle A \cong \angle E$

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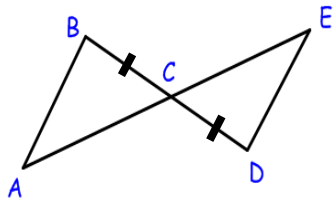
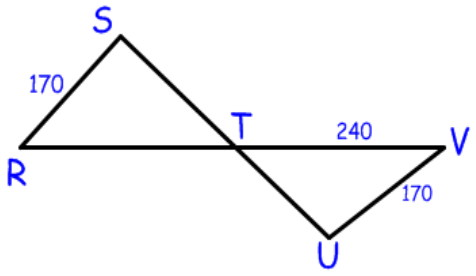


_____ 7. Which postulate or theorem can be used to justify the measure of $\overline{RT}$?

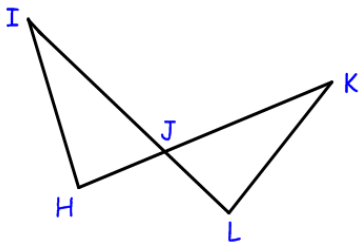
Given: $\angle R \cong \angle V$



A] SSS B] AAS C] ASA D] SAS

_____ 8. Refer to the figure and given information shown.
Which of the following statements is true?

Given: $\overline{HJ} \cong \overline{JL}$, $\overline{IJ} \cong \overline{KJ}$



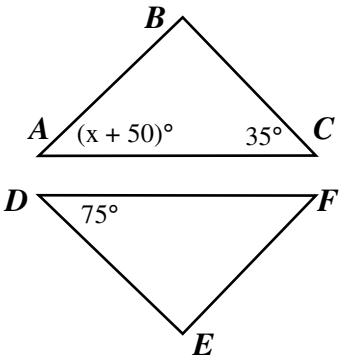
A] ΔHIJ ≅ ΔKLJ by SAS

B] ΔHIJ ≅ ΔKLJ by ASA

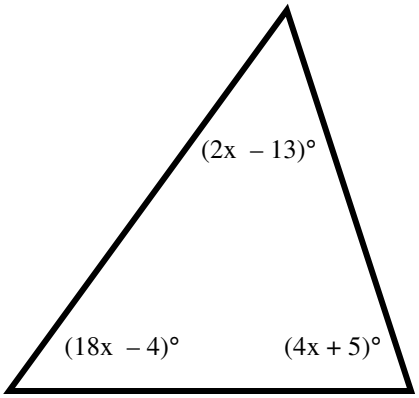
C] ΔHIJ ≅ ΔLKJ by SAS

D] ΔHIJ ≅ ΔLKJ by ASA

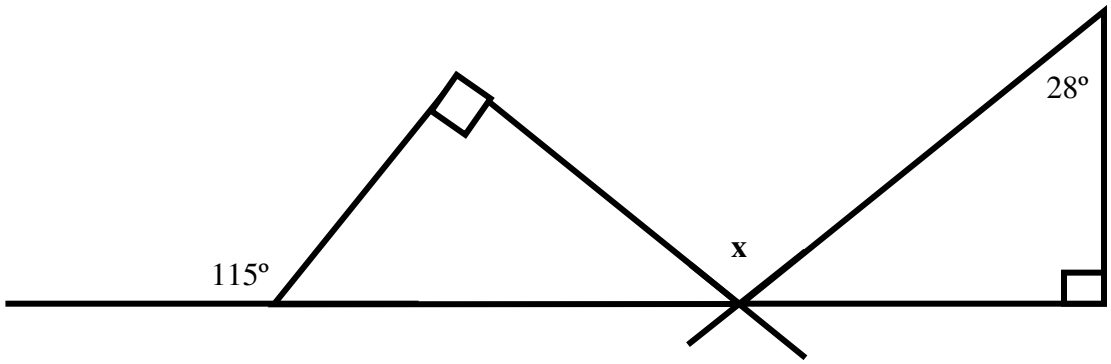
_____ 9. In the diagram, ∠B ≅ ∠E and ∠C ≅ ∠F. Find the value of x.



_____ 10. Find the measure of the interior angles. Not drawn to scale.



_____ 11. Find the value of x in the given diagram.



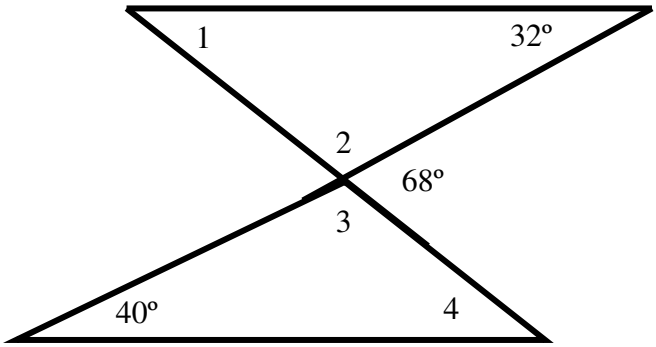
12. Solve for each of the missing angles.

∠1 = _____

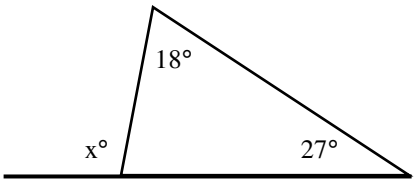
∠2 = _____

∠3 = _____

∠4 = _____



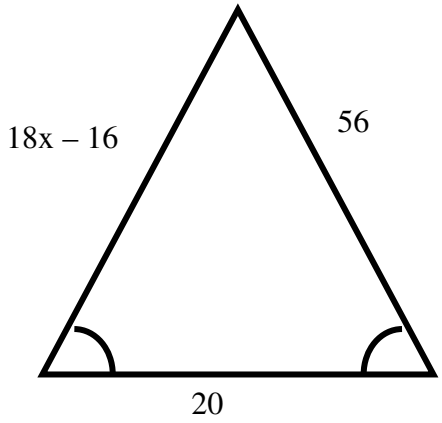
_____13. Solve for x.



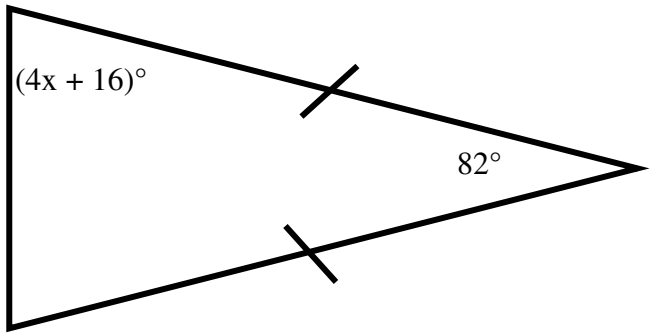
_____ 14. Use the information in the box to classify triangle ABC by sides.

AB = 5x - 17 BC = 4x - 8 AC = 11x+15	Perimeter = 70

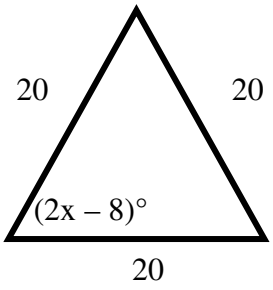
_____ 15. Find the value of x.



_____ 16. Find the value of x.

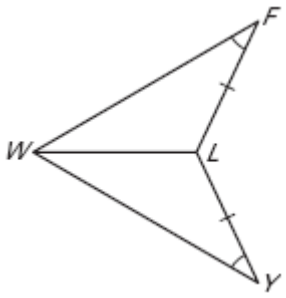


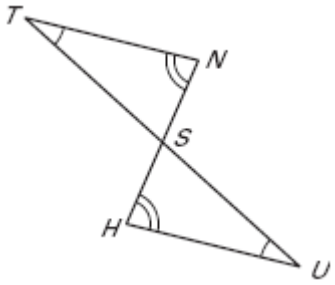
_____ 17. Find the value of x.

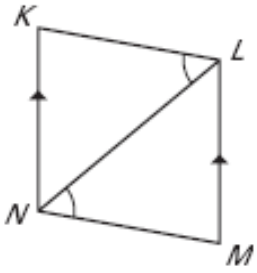


18 – 20 Determine which method you would use to prove the two triangles congruent. If none of the methods apply, write NONE.

18._____ 19._____ 20._____



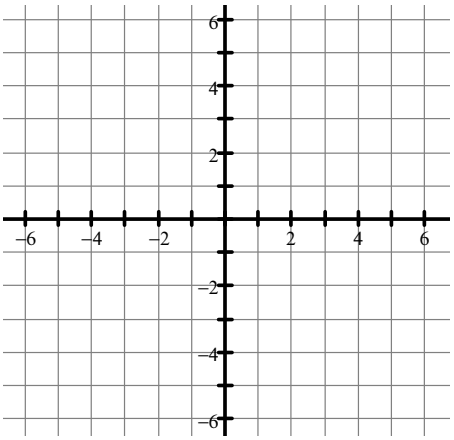




21. Triangle ABC has the given vertices. $A(-1, 2)$, $B(0,0)$, $C(6,3)$

a) **Classify it by its sides (what formula to you need to use for this?)**

b) **Determine if the triangle is a right triangle. (what do you look at for this?)**



Proofs: Review all proofs gone over in class.

Geometry
Chapter 4 Practice Test

Name: _____ Date: _____
Block: 1 2 3 4 5 6 7 8

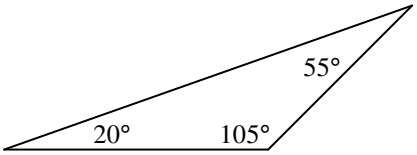
Key

Not all triangles are drawn to scale.

_____ 1. The given triangle would be classified as _____ .

A] Scalene B] Isosceles

C] Equilateral D] none



3 different angles measures means 3 different side lengths

_____ 2. The given triangle would be classified as _____ .

A] Isosceles B] Scalene

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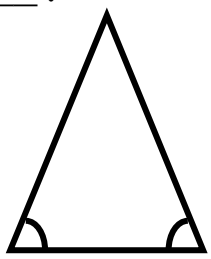
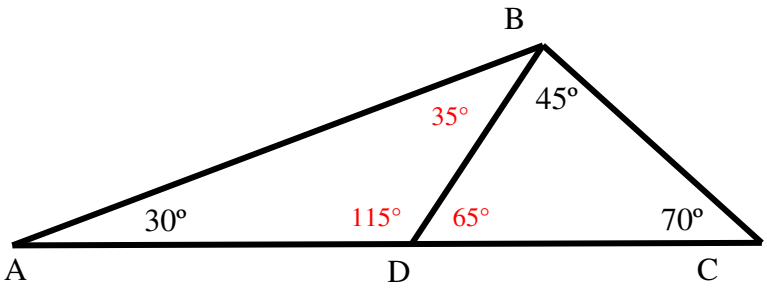


2 equal angle measures means 2 side lengths will be the same

_____ 3. Find the missing angles. Then, classify each triangle by it's angles.



Find all missing angles first.

A] ΔBDC	B] ΔADB	C] ΔABC
ACUTE	OBTUSE	ACUTE

_____ 4. Complete the statement using one of the following words:
Always, Sometimes or *Never*.

"An isosceles triangle is _____ an obtuse triangle."

Include a drawing to support your answer to #4. SOMETIMES

_____ 5. How many obtuse angles can an isosceles triangle have?
Explain how you know.

An isosceles triangle can have only 1 obtuse angle. See the diagram above.

_____ 6. What must be true in order for $\Delta ABC \cong \Delta EDC$ by AAS?

A] $\overline{AC} \cong \overline{CE}$ B] $\angle A \cong \angle E$

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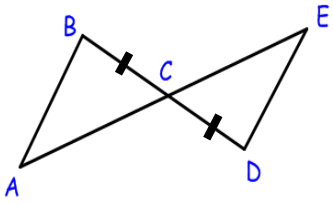
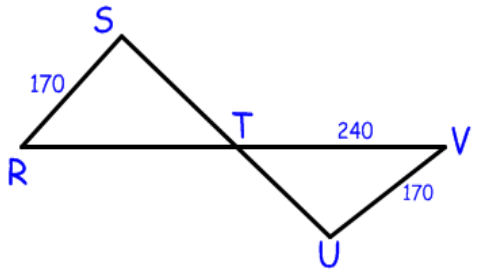


Be sure you pay attention to the order!!

_____ 7. Which postulate or theorem can be used to justify the measure of $\overline{RT}$?

Given: $\angle R \cong \angle V$



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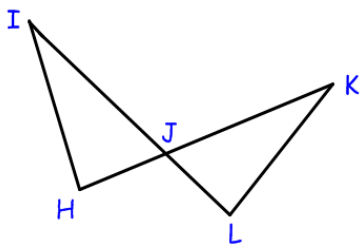


A] ΔHIJ ≅ ΔKLJ by SAS

B] ΔHIJ ≅ ΔKLJ by ASA

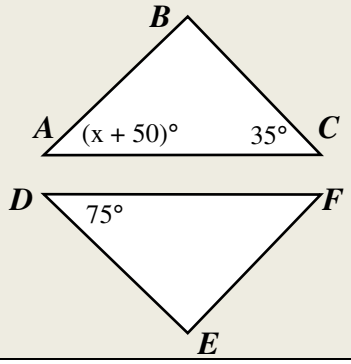
C] ΔHIJ ≅ ΔLKJ by SAS Order matters!!!

D] ΔHIJ ≅ ΔLKJ by ASA

_____ 9. In the diagram, ∠B ≅ ∠E and ∠C ≅ ∠F. Find the value of x.

X + 50 = 75

X = 25



_____ 10. Find the measure of the interior angles. Not drawn to scale.

The sum of all three interior angles is 180°...

24x – 12 = 180

24x = 192

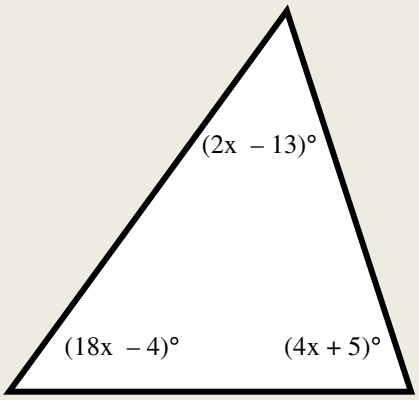
X = 8

Plug in 8 for x to find the value of each angle.

18x – 4 = 140

4x + 5 = 37

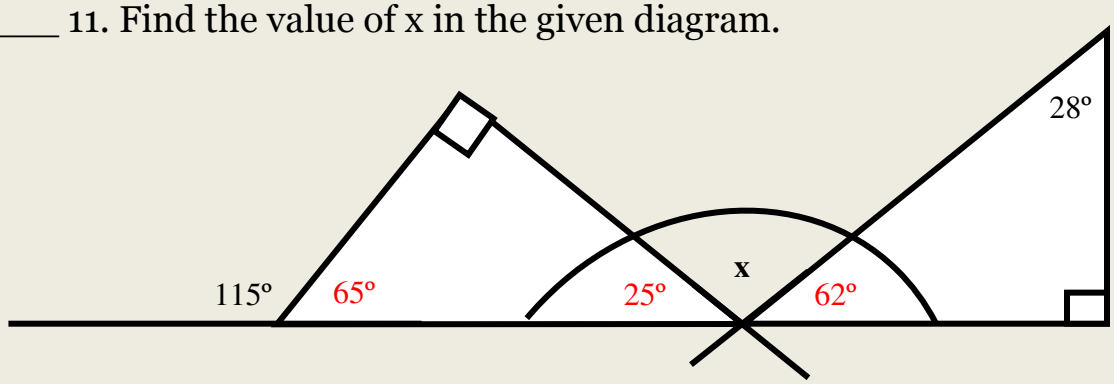
2x – 13 = 3



Don't forget to find the measure of each angle!!!!!

Double check your work to see that all 3 angles have a sum of 180°.
If not, then you got the wrong value for x!!

_____ 11. Find the value of x in the given diagram.



First, find all missing angles in each triangle. Now…x, 25°, and 62° have a sum of 180

$$X + 25 + 62 = 180$$
$$X + 87 = 180$$
$$X = 93^\circ$$

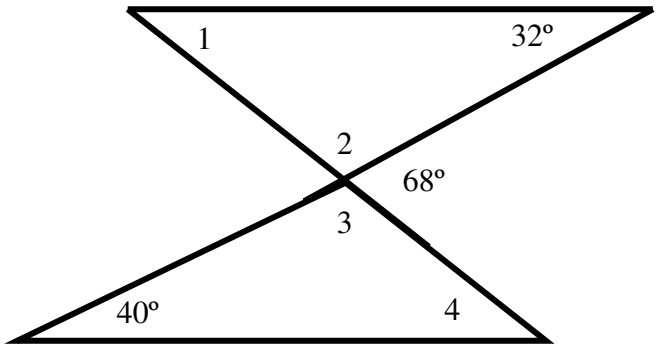
12. Solve for each of the missing angles.

∠1 = _____

∠2 = _____

∠3 = _____

∠4 = _____



Find angles 2 and 3 first:
180 – 68 = 112

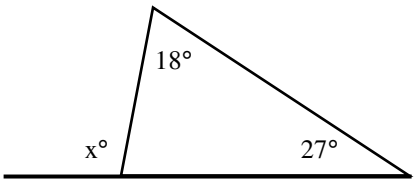
Then, find the missing angles in each triangle…

Find angles 2 and 3 first:
180 – 68 = 112

Use the Exterior Angle Theorem to find angles 4 and 1…
68 = 32 + m<1
36 = m<1

68 = 40 + m<4
28 = m<4

_____13. Solve for x.



Use the Exterior Angle Theorem

X = 27 + 18
X = 45

_____ 14. Use the information in the box to classify triangle ABC by sides.

AB = 5x - 17 BC = 4x -8 AC = 11x+15	Perimeter = 70

First, solve for x

AB + BC + AC = 70
5X – 17 + 4X – 8 + 11X + 15 = 70
20x – 10 = 70
20x = 80
x = 4

Second, find the length of each side and then compare to make your conclusion.

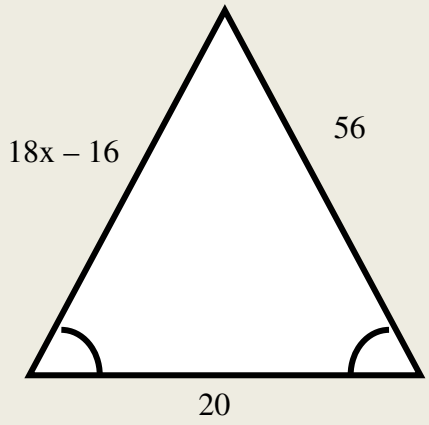
AB = 5(4) – 17 = 3
BC = 4(4) – 8 = 8
AC = 11(4) + 15 = 59

Since the lengths of all 3 sides are different, the triangle is scalene.

_____ 15. Find the value of x.

Set the two sides equal to each other that are diagonal from the congruent angles.

18x – 16 = 56
18x = 72
X = 4

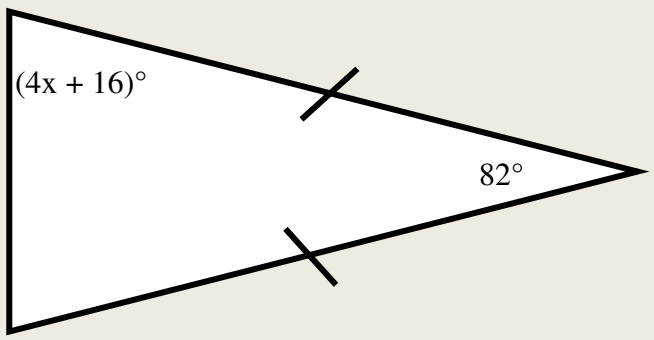


_____ 16. Find the value of x.

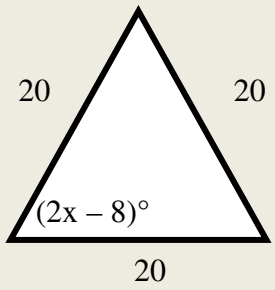
Since the vertex angle is 82°, then the remaining angles must be 98 (180 – 82= 98)

Since these are the base angles, they must be the same…so take ½ of 98

4x + 16 = 49
4x = 33
X = 8.25



_____ 17. Find the value of x.

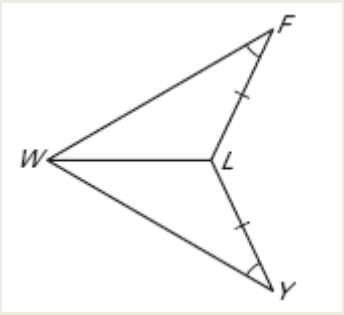


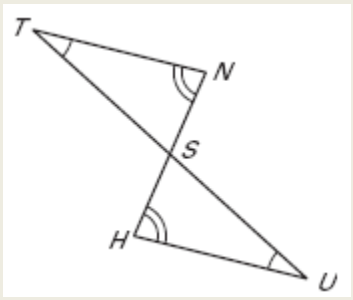
Notice…all sides are the same, so all angles are the same!
This means each angle is 60°…

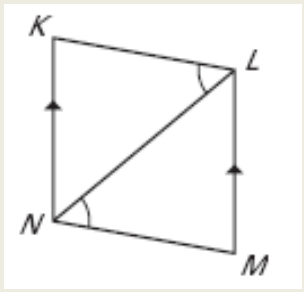
$$2x - 8 = 60$$
$$2x = 68$$
$$X = 34$$

18 – 20 Determine which method you would use to prove the two triangles congruent. If none of the methods apply, write NONE.

18.____NONE_____ 19.____NONE_____ 20.__ASA__







21. Triangle ABC has the given vertices. *A*(-1, 2), *B*(0,0), *C*(6,3)

a) Classify it by its sides (what formula to you need to use for this?)

b) Determine if the triangle is a right triangle. (what do you look at for this?)

a) Find the length of each side and compare their lengths. Be sure to show your work!!

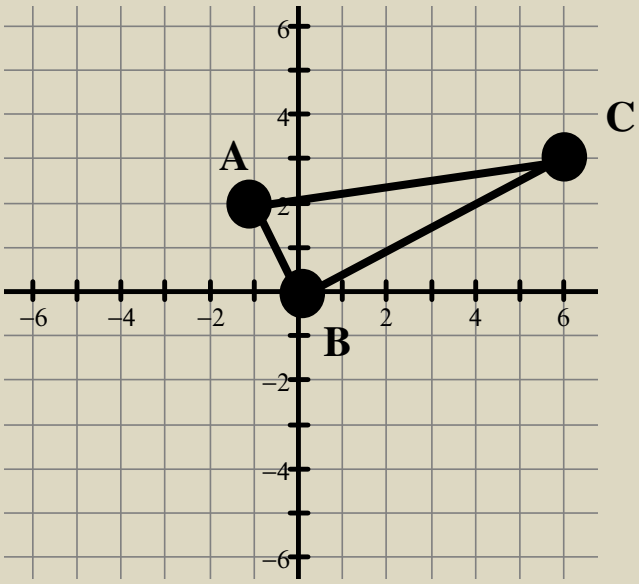
$$\overline{AB} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
$$= \sqrt{(-1-0)^2 + (2-0)^2}$$
$$= \sqrt{(-1)^2 + (2)^2}$$
$$= \sqrt{5} \approx 2.2$$

$$\overline{BC} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
$$= \sqrt{(6-0)^2 + (3-0)^2}$$
$$= \sqrt{(6)^2 + (3)^2}$$
$$= \sqrt{45} \approx 6.7$$

$$\overline{AC} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
$$= \sqrt{(6-(-1))^2 + (3-2)^2}$$
$$= \sqrt{(7)^2 + (1)^2}$$
$$= \sqrt{50} \approx 7.1$$

Since all three sides have different lengths, the triangle is scalene.

b) Find the slopes for each segment. You can do this by graphing or using the slope formula. See if any are negative reciprocals. Watch notation!!



Slope for AB

$$m_{\overline{AB}} = \frac{2-0}{-1-0} = \frac{2}{-1} = -2$$

Slope for BC

$$m_{\overline{BC}} = \frac{3-0}{6-0} = \frac{1}{2}$$

Slope for AC

$$m_{\overline{AC}} = \frac{3-2}{6-(-1)} = \frac{1}{7}$$

Since the slopes of $\overline{AB}$ and $\overline{BC}$ have a product of -1, they are negative reciprocals. Therefore, we have a right angle, which means the triangle is a right triangle ☺

Proofs: Review all proofs gone over in class.