Name _____ Date _____

A triangle is a _____-sided polygon. It is made up of segments called _____, that intersect at endpoints called _____. The interior angles of a triangle sum up to _____.

CLASSIFY BY ANGLES

Acute Triangle	**Obtuse Triangle**	**Right Triangle**	**Equiangular Triangle**
_____ angles are acute.	_____ angle is obtuse. The other two angles must be _____.	_____ angle is right. The other two angles must be _____ and are _____.	_____ angles are congruent. Equiangular triangles are _____ triangles.

CLASSIFY BY SIDES

Scalene Triangle	**Isosceles Triangle**	**Equilateral Triangle**
All sides have _____ lengths.	At least _____ sides are congruent.	_____ sides are congruent. This is a special kind of _____ triangle.

ANGLE/SIDE RELATIONSHIPS

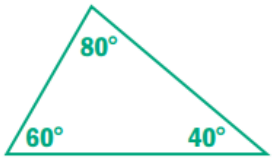
If a triangle has 3 angles congruent, it has _____ sides congruent.

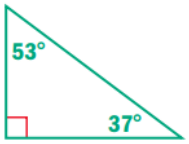
If a triangle has 2 angles congruent, it has _____ sides congruent.

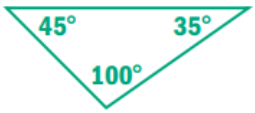
If a triangle has 0 angles congruent, it has _____ sides congruent.

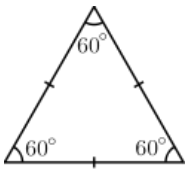
EXAMPLES

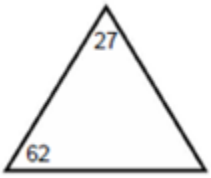
Classify the triangle by its angle measures.

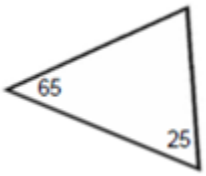
1) 

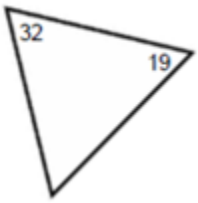
2) 

3) 

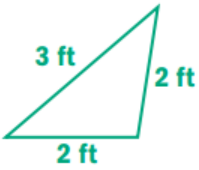
4) 

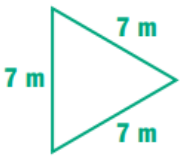
5) 

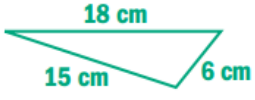
6) 

7) 

Classify the triangle by lengths of its sides.

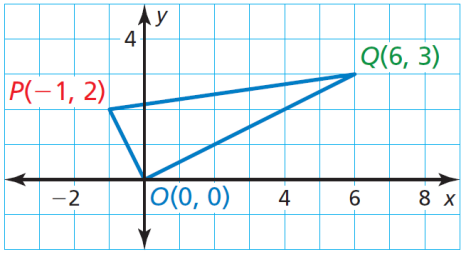
8) 

9) 

10) 

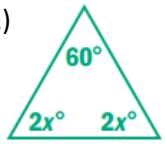
TRIANGLES IN THE COORDINATE PLANE

11) Classify ΔPQO by its sides. Then determine whether it is a right triangle.

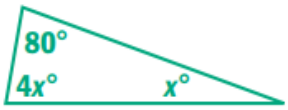


Find the value of x. Then classify the triangle.

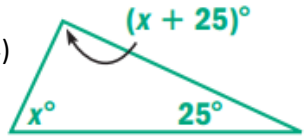
12)



13)



14)

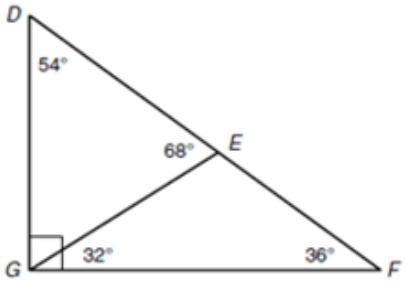


Use the figure to the right to answer the following:

15) Classify ΔDEG

16) Classify ΔGEF

17) Classify ΔDGF



Name _____ Date _____

1) Use the figure to the right to answer the following:

Identify an acute triangle.

Name the hypotenuse.

Name the vertex angle.

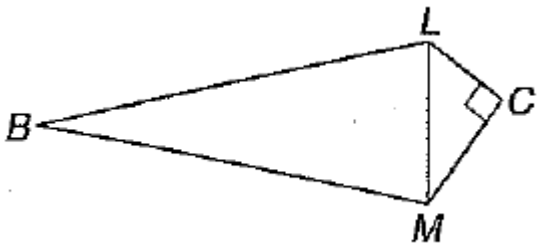
Name the side opposite $\angle C$.

Name the angle opposite $\overline{MB}$.

Name the base angles.

Name the vertices of the right triangle.

Name the legs of the isosceles triangle.



$\triangle BLM$ is isosceles with base $\overline{ML}$.

2) $\triangle BCD$ is isosceles with $\angle C$ as the vertex angle. Find x and the measure of each side if $BC = 2x + 4$, $BD = x + 2$, and $CD = 10$. (*Hint:* Draw a diagram.)

3) $\triangle HKT$ is equilateral. Find x and the measure of each side if $HK = x + 7$ and $HT = 4x - 8$.

4) $\triangle ABC$ is isosceles with $\angle A$ as the vertex angle. AC is five less than two times a number. AB is three more than the number. BC is one less than the number. Find the measure of each side.

5) For each sentence, fill in the blank with Always, Sometimes, Never.

Equilateral triangles are _?_ isosceles.

Scalene triangles are _?_ isosceles.

Right triangles are _?_ acute.

Acute triangles are _?_ equilateral.

Obtuse triangles are _?_ scalene.

Equiangular triangles are _?_ acute.

6) $\triangle RST$ is equilateral, and V lies on $\overline{RS}$ so that $\overline{TV} \perp \overline{RS}$. Classify $\triangle TVS$ by the measures of its angles and its sides.

7) Classify ΔABC by its sides. Then determine whether it is a right triangle.