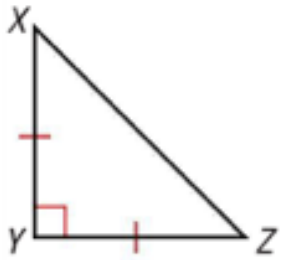
Geometry Honors
Unit 6: Congruent Triangles
6.1 Classify Triangles by Sides and Angles

Mathematician: _____
Period:_____

LEVEL: EMERGING

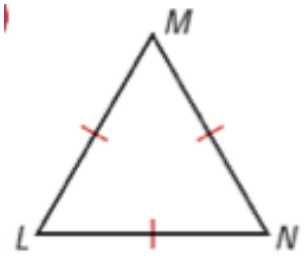
Directions: Classify the following angles by its angles (right, acute, or obtuse) AND sides (equilateral, scalene, or isosceles).

1)



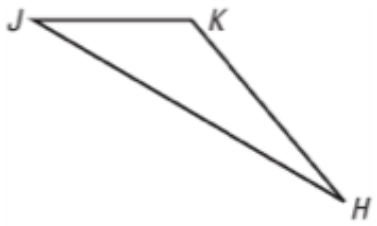
_____ _____

2)



_____ _____

3)



_____ _____

LEVEL: PROFICIENT

4) $m\angle X$ and $m\angle Y$ are congruent and complementary in a triangle. Which descriptions match this triangle? Choose all that apply.

(A) Right Triangle
(B) Obtuse triangle
(C) Scalene Triangle
(D) Isosceles Triangle
(E) Not enough information

5) $m\angle B = 120^\circ$ and $m\angle D = 14.2^\circ$ in a triangle. Which descriptions match this triangle? Choose all that apply.

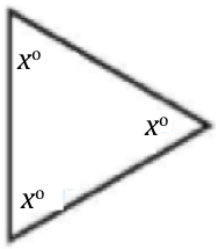
(A) Right Triangle
(B) Obtuse triangle
(C) Scalene Triangle
(D) Isosceles Triangle
(E) Not enough information

6) $m\angle A = 50^\circ$ and $m\angle B = 50^\circ$ in a triangle. Which descriptions match this triangle? Choose all that apply.

(A) Acute Triangle
(B) Obtuse triangle
(C) Scalene Triangle
(D) Isosceles Triangle
(E) Not enough information

Directions: Find the value of x. Then classify the triangle by its angles and sides.

7)

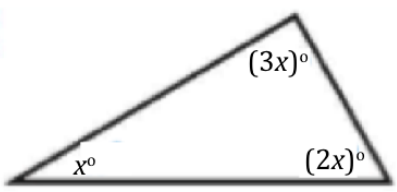


$x =$ _____

Type of Δ: _____

_____

8)

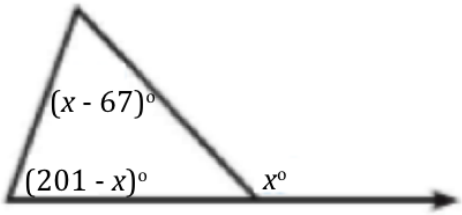


$x =$ _____

Type of Δ: _____

_____

9)



$x =$ _____

Type of Δ: _____

_____

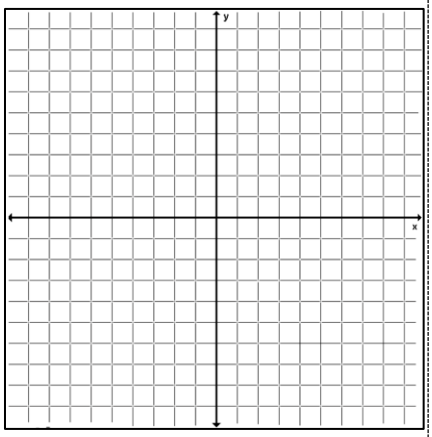
LEVEL: MASTERY

10) The $m\angle D$ is three times $m\angle E$, and $m\angle F = 56^\circ$. What type of triangle is ΔDEF?

11) The $m\angle A$ is five less than $m\angle B$, and $m\angle C$ is 10 more than 5 times $m\angle B$. What type of triangle is ΔDEF?

Directions: A triangle has the given vertices. Graph the triangle and then classify the triangle by its sides.

12) $A(2,3), B(6,3), C(2,7)$



AB = _____

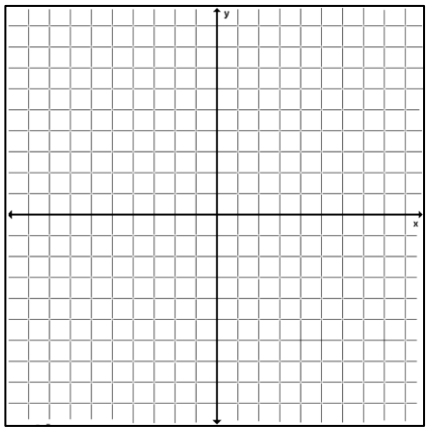
BC = _____

AC = _____

Type of Δ:

_____

13) $A(-3,1), B(1,3), C(2,-4)$



AB = _____

BC = _____

AC = _____

Type of Δ:

_____

Directions: Use the following descriptions to answer the following questions.

14) In ΔWUT, $\angle W$ and $\angle U$ are complementary, but not equal. Which type of triangle is ΔWUT? Select all that apply.

(A) Right
(B) Acute
(C) Obtuse
(D) Isosceles
(E) Not enough information

15) In ΔABC, $\angle A$ and $\angle B$ are congruent, but not complementary. Which type of triangle is ΔWUT? Select all that apply.

(A) Right
(B) Acute
(C) Obtuse
(D) Isosceles
(E) Not enough information

16) In ΔCAT, $m\angle C$ is 4 times the $m\angle A$ and $m\angle T = 80°$. ΔCAT is best described as:

(A) Scalene and obtuse
(B) Isosceles and obtuse
(C) Isosceles and acute
(D) Scalene and right

17) ΔXYZ is scalene, and the $m\angle X = 40^\circ$. Which of the following statements **cannot** be true?

(A) $m\angle X = m\angle Z$
(B) $m\angle Z = 2(m\angle X)$
(C) $m\angle Y = m\angle Z$
(D) $m\angle X > m\angle Z$
(E) $m\angle X > m\angle Y$

Directions: Construct an equilateral triangle with the given side length. Show your work below.

18)

19)

Directions: Construct an isosceles triangle with the given side length as the length of the two congruent sides. Show your work below.

20)

21)

Directions: Construct a scalene triangle with the given side lengths. Show your work below.

22)