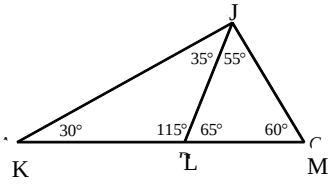
Focus on Geometry Name _____ Date _____ Period ____

Unit 4 practice test, Fall 2015 Show your work where needed, and write your answer in the space provided.

1) Classify all three triangles by their angles.



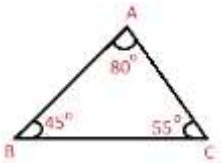
ΔJLM is a _____.

ΔJKL is a _____.

ΔJKM is a _____.

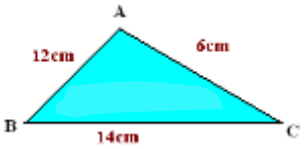
2) Name the longest side of $\triangle ABC$.

_____



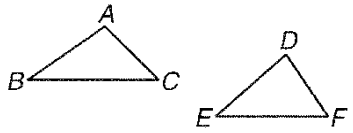
3) Which angle in $\triangle ABC$ has the greatest measure?

_____

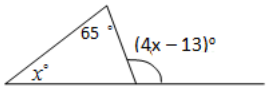


4) In the triangles below, if $\overline{AC} \cong \overline{DF}$, $\overline{AB} \cong \overline{ED}$, $BC < EF$, what can be concluded about m∠A and m∠D?

_____



In #5 and 6, refer to the figure below.

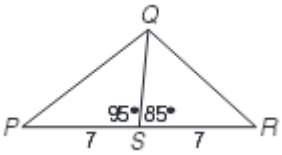


5) Solve for *x*._____

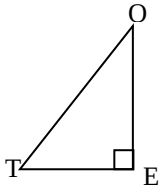
6) Find the measure of the exterior angle._____

7) Using the figure below, and write an inequality using PQ and QR, if possible.

_____



8) Where do the altitudes of ΔTOE intersect?_____



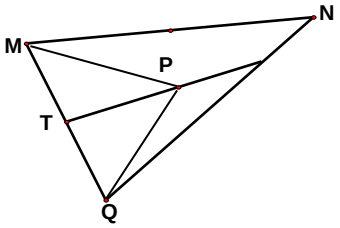
9) Indicate whether the following sets of numbers can be the lengths of the sides of a triangle by writing "yes" or "no" in the space provided, and explaining why or why not. Show your work.

A) 4, 4, 8 _____

B) 13, 7, 5 _____

C) 16, 7, 21 _____

10) Segment TP is a perpendicular bisector of ΔMNQ below.



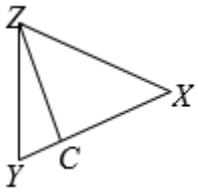
A) If QP = 28, then find MP. _____

B) If TM = 3x – 8 and QT=7x – 2, then find x. _____

11) $\overline{ZC}$ is an altitude of ΔZYX

A) What is m∠XCZ? _____

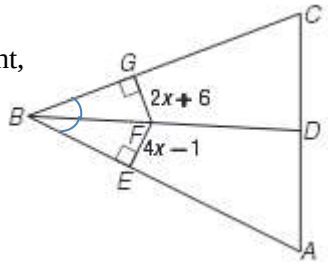
B) If m∠Y = 18x + 76 and m∠YZC = 34x, then find x. _____



12) The two sides of a triangle are 5 feet and 9 feet long. Let *m* represents the measure of the third side. List a possible range for *m*. _____

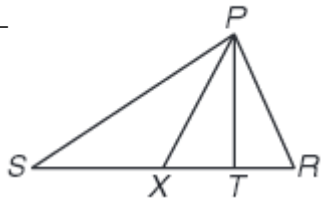
13) In the figure to the right,

Find *x* _____



14) $\overline{PT}$ is an angle bisector of ΔPXR, m∠XPT=8x – 23, m∠TPR=33, and m∠XTP=13x – 1

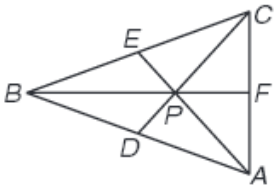
A) Find *x* _____



B) Is $\overline{PT}$ an altitude? Explain why or why not.

_____

In #15-16,segments BF, EA and DC are the <u>medians</u> of ΔABC shown below.



15) If AB = 42, then find AD. _____

16) If BF = 48, and BP = 4x – 24, then find x. _____

17) A triangle is formed by three cars parked in a garage as shown in the figure. The distances shown are measured in yards. What is wrong with the labels on the triangle?

_____

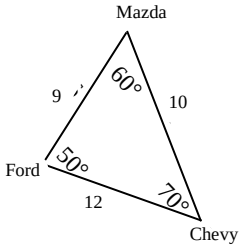
_____

_____

_____

_____

_____



18) Given ΔCAT where m∠C = $(5x - 30)^o$, m∠A = $3x^o$, and m∠T = $(2x + 45)^o$. Find:

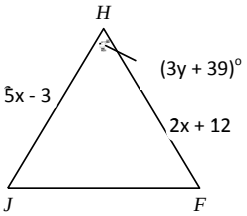
x= _____ m∠C=_____ m∠A= _____ m∠T=_____

19) ΔABC is isosceles, ∠A is the vertex angle, AB=x + 12, AC= 4x – 6, and BC= 2x + 10. Find:

x _____ AB _____ AC _____ BC _____

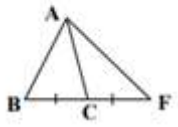
20) Triangle *FJH* is an equilateral triangle. Find:

x=_____ *y*=_____



Extra credit) Name the special segment listed

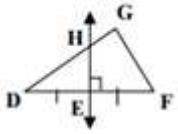
$\overline{AC}$



A) _____

_____

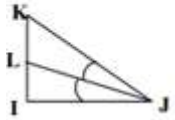
$\overline{HE}$



B) _____

_____

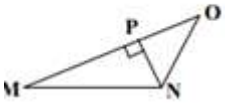
$\overline{JL}$



C) _____

_____

$\overline{PN}$



D) _____

_____