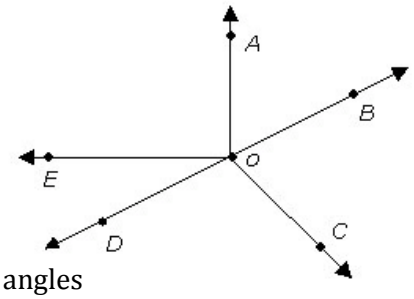
Geometry Name: _____

Semester 1 Final Exam Mixed Review

1) Use the figure below to name the following figures:



_____ a) A line

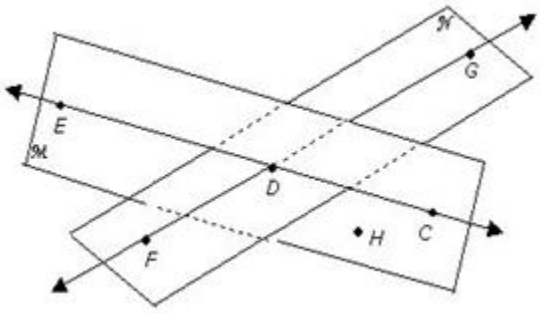
_____ b) A ray

_____ c) Opposite rays

_____ d) Only adjacent angles

_____ e) Adjacent and linear pair angles

2) Identify the plane containing D, E, and C.



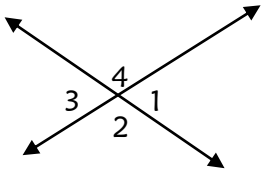
3) Two lines cross at _____.

4) Two planes cross at _____

5) $m < K = (6x + 12)°$. Find the measure of the complement of $\angle K$.

6) $m\angle ABC = (6x + 8)°$ and $m\angle DEF = (12x - 8)°$ If $\angle ABC$ and $m\angle DEF$ are supplementary, find the measure of each angle.

7) If $m\angle 1 = 5x + 32$ and $m\angle 3 = 3x + 64$, find the $m\angle 4$.



8) Identify the coordinates of the midpoint P(1, -1) and Q(7, -3).

9) If the midpoint of AB is C, and A is (2, 5) and C is (-3, 4), find the coordinates of endpoint B.

10) Find the distance of $\overline{PQ}$ with endpoints P(1, -1) and Q(7, -3).

11) Write the Following Statements:

Conditional: If it is October 31st, it is Halloween!

Inverse:_____

Converse:_____

Contrapositive:_____

Bi-Conditional: _____

12) Draw a conclusion from the given information.

Given: If it is Sunday, then tomorrow is Monday. If tomorrow is Monday, then we go back to school. If we go back to school, then we will have homework.

Conclusion: _____

13) Write the Biconditional Statement from the Conditional Statement.

Conditional: If you study hard, then you will do well in Geometry.

Biconditional:

14) Name the property used to make the conclusion.

A. $x = x$ _____

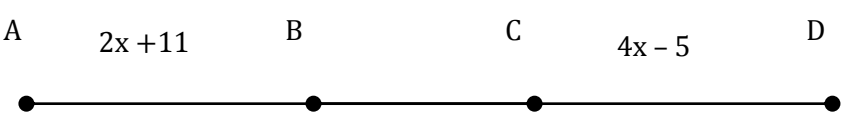
B. If $AB = CD$ and $CD = EF$, then $AB = EF$. _____

C. If $x = 4$ and $y = 2x$, then $y = 2(4)$. _____

D. If Geo = Math, then Math = Geo _____

15) Solve for the variable using the given information.

Given: $\overline{AB} \cong \overline{BC}$, $\overline{BC} \cong \overline{CD}$



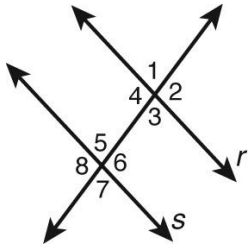
16) Two angles $\angle 7$ and $\angle 8$ are both complementary to $\angle 9$. If $m\angle 7 = 54^o$, what is the $m\angle 8$?

17) Find the measures of the angles.

Given: $s \parallel r$

$m\angle 2 = (10x + 4)^o$

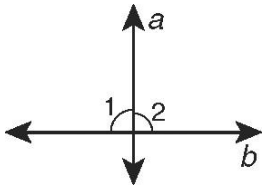
$m\angle 6 = (8x + 28)^o$



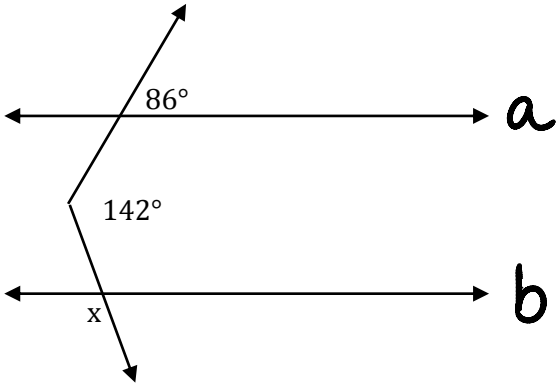
18) Given: $\angle 1$ and $\angle 2$ form a linear pair

$\angle 1 \cong \angle 2$

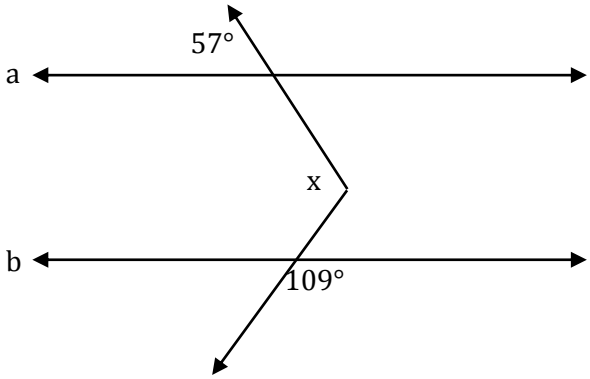
Conclusion:



19) Let line a is parallel to line b, find the value of x.



20) Let line a is parallel to line b, find the value of x.

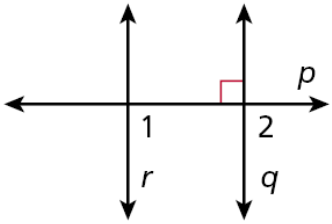


21) Solve for x and y in the following problem.

$r \parallel q$

$m\angle 1 = (3x + y)^o$

$m\angle 2 = (2x + 3y - 5)^o$



22) Find the slope given the points (-3, -6) and (12, -1)

23) Find the value of x given the points (2, x) and (12, -4) and slope = 1/2.

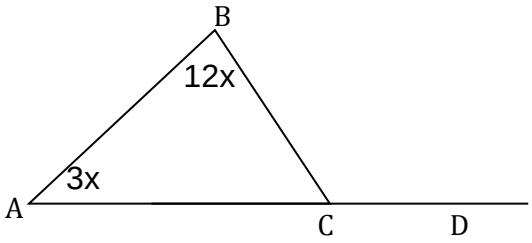
24) Write an equation of a line in slope-intercept form that passes through the points (-1,8) and (4, -2).

25) Write an equation of a line in point-slope form that passes through the points (-5, 9) and (0, -6).

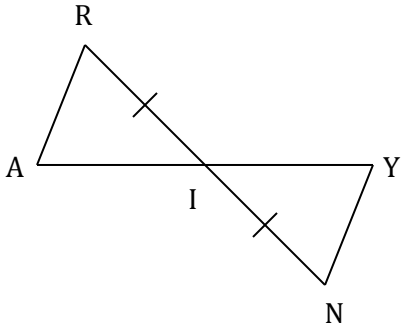
26) Write an equation of a line in slope-intercept form that is parallel to the line y=-2x+4 and passes through the point (3, 5).

27) Are the lines parallel, perpendicular, or neither? 5x – 4y = 10 and 5y = -4x – 6.

28) If m∠BCD = 150° find m∠B.



29) Why are the triangles below congruent?



30) Classify each triangle by its ANGLES and SIDES.

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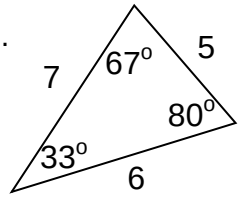
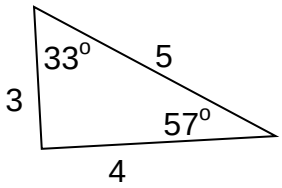
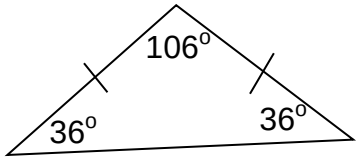




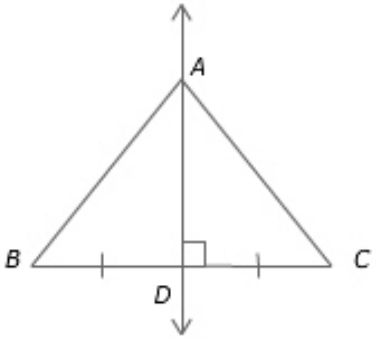


_____ _____ _____

_____ _____ _____

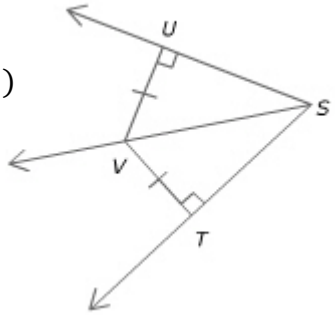
31) The measures of three angles of a triangle are in the ratio of 2:3:4. Find the measure of the largest angle.

32)



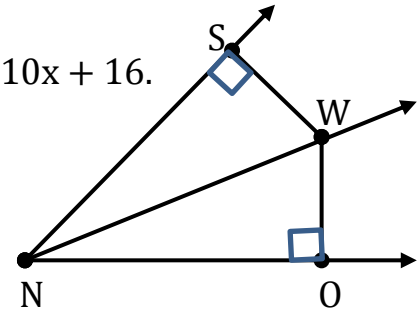
Given that $\overline{AD}$ is the perpendicular bisector of $\overline{BC}$, AB = 2a + 7, and AC = 6a – 21, identify AC.

33)



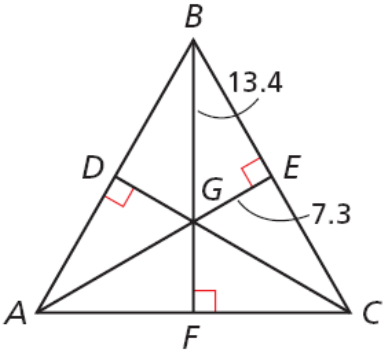
Given that $m\angle USV = (2x+17)^\circ$ and $m\angle VST = (5x-10)^\circ$, find the $m\angle UST$.

34) Given: $\angle SNW \cong \angle ONW$, SW=6x – 1, $\angle SWN = 3x+20$, and SO = 10x + 16. Find $m\angle SNO$



~~35) *DG*, *EG*, and *FG* are the perpendicular bisectors of Δ*ABC*. Find:~~ **(OMIT THIS PROBLEM!)**

~~a) GF =~~
~~b) AG =~~
~~c) If DC = 15, then what is DG?~~

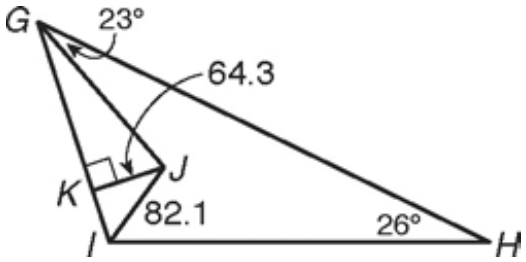


36) The point of concurrency formed by the medians is called the _____

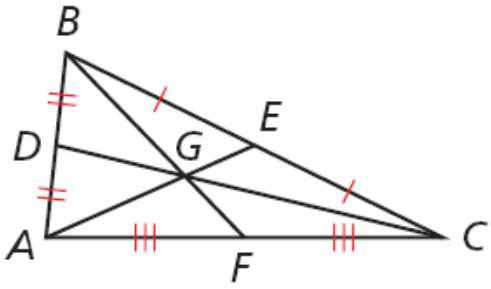
~~37) GJ and JI are angle bisectors. **(OMIT THIS PROBLEM!)**~~

~~What is the distance from J to GH?~~

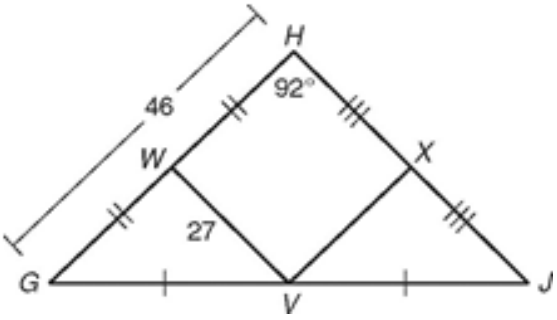
~~What is m∠GIH?~~



38) In ΔABC, $AE = 12$, $DG = 7$, and $BG = 9$. Find all possible side lengths



40) Using the diagram below, find the following:



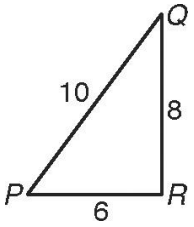
a) VX= _____

b) HJ=_____

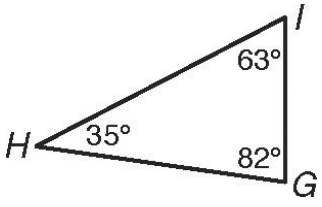
c) m∠VXJ=_____

d) XJ=_____

41) Name the angles in order from smallest to largest.



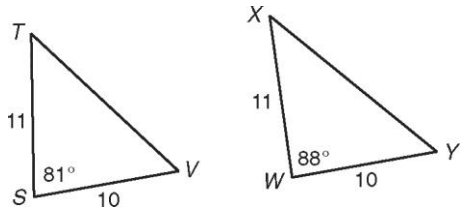
42) Name the sides in order from smallest to largest.



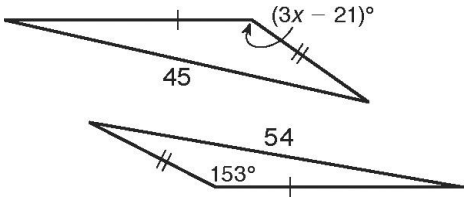
43) Tell whether a triangle can have sides with lengths of 3, 7, and 12. Explain why or why not.

44) If a = 12 and b = 37, what are the possible lengths for side c?

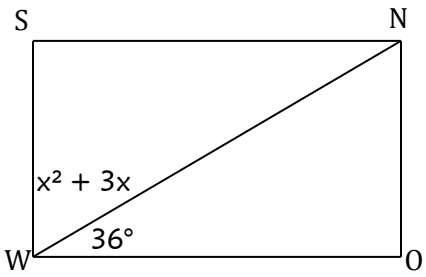
45) Compare TV and XY.



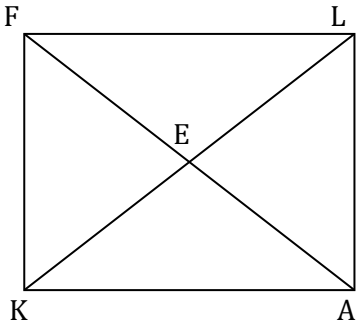
46) Find the range of values for x.



47) SNOW is a rectangle. Find OW if SN = -2x + 5.

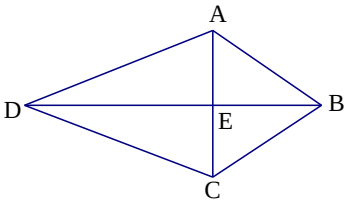


48) FLAK is a square. If m∠ ELF = x + 2y + 6 and m∠KEA = 2x + 5y, solve for x and y.



49) Given ABCD is a kite with $\overline{AB} \cong \overline{BC}$.

AE = 3x – 1 and ∠AEB = 4x + 10, what is AC?



50) Given: ABCD is a parallelogram

m ∠A = x + 62

m ∠ B = 3x + 2

Find: m ∠ D

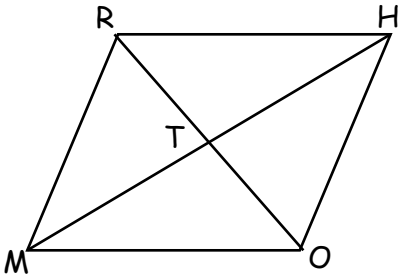
51) Given: Rhombus RHOM

m∠MOH = (11x + 21)

m∠MRO = (7x – 3)

RH = 2x – 7

Find the perimeter.



Always, Sometimes, Never?

52) A rectangle is a square.

54) An isosceles trapezoid is a square

55) A kite is a parallelogram.

56) The diagonals of a rhombus form four isosceles right triangles.

57) The supplement to an acute angle is acute.

58) If two angles are congruent and complementary, then each angle measures 45°.

59) An obtuse angle has a supplement.

60) Three vertices of ▱ GEOM are G(2, -6), E(-1, 2), and O(5,3). Find the coordinates of vertex M.