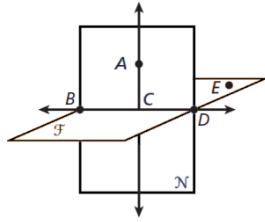


Pre-AP Geometry Fall 2015 Semester Exam REVIEW

*Chapter 1.1 Points Lines Planes

Use the figure to name each of the following:

- 1) three non-collinear points
- 2) one line in three different ways
- 3) the intersection of the two planes
- 4) the intersection of the two lines

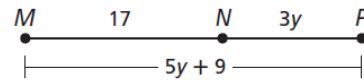


13) B is a point between points A and C, segment $AC = 15.8$, and segment $AB = 9.9$. **Find the length of segment BC.** (Draw a picture).

Draw and label each of the following:

5) a segment with endpoints S and T with midpoint, M

14) **Find the length of segment NP.**

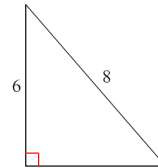


6) three coplanar lines that intersect in a common point

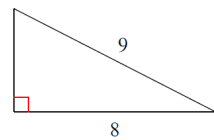
Find the missing side for each triangle in simplest radical form AND as a decimal rounded to the nearest hundredth.

7) ray with endpoint F that passes through G

15)

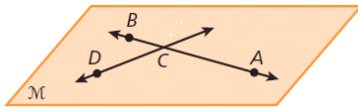


16)



8) two lines that do not intersect

Use the figure to name each of the following:



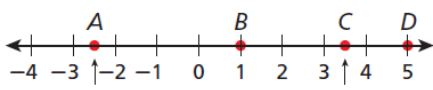
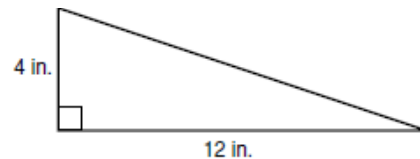
- 9) a pair of opposite rays
- 10) the plane in two different ways

17) Determine the length of the given triangle's hypotenuse. The answer should be given both rounded to the nearest tenth and in simplest radical form.

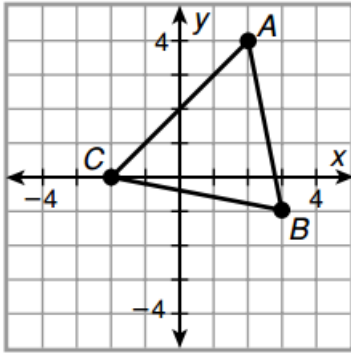
*Chapter 1.2 Line Segments and Distance

Find the length of the following:

- 11) Segment AB
- 12) Segment BC



18) Find the lengths below and leave your answer in simplest radical form.



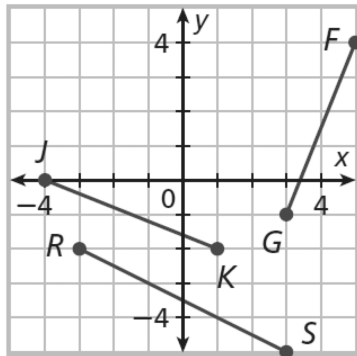
- a. Find AB
- b. Find BC
- c. Find CA

Use the Distance formula or Pythagorean theorem to find the length of each segment. Round answers to the nearest tenth.

19) Segment JK

20) Segment RS

21) Segment GF



*Chapter 1.3 Locating Points and Midpoints

22) K is the **midpoint** of segment JL, $JL = 4x - 2$, and $JK = 7$. Find x , the length of KL , and JL .

23) Y is the midpoint of \overline{XZ} . X has coordinates (2, 4), and Y has coordinates (-1, 1). Find the coordinates of Z.

24) \overline{TU} has endpoints T(5a, -1b) and U(1a, -5b). Find the midpoint.

Find the coordinates of the midpoint of each segment:

25) AB with endpoints A (4, -6) and B (-4, 2)

26) CD with endpoints C (0, -8) and D (3, 0)

*Chapter 1.4 and 1.5 Angle Measure and Angle Relationships

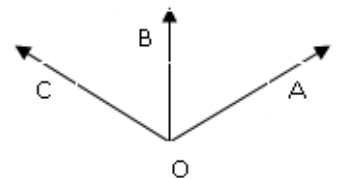
27) $\angle A$ is an acute angle. $\angle O$ is an obtuse angle. $\angle R$ is a right angle. Put $\angle A$, $\angle O$, and $\angle R$ in order from least to greatest by measure.

28) a. Which point is the vertex of $\angle BCD$?

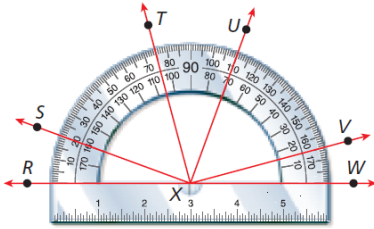
b. Which rays form the sides of $\angle BCD$?

29) Correctly name all 3 angles in the diagram.

- 1.
- 2.
- 3.



Use the protractor to find the measure of each angle. Then classify each as acute, right, or obtuse.



- 30) $\angle VXW$ 31) $\angle TXW$ 32) $\angle RXU$

33) L is in the interior of $\angle JKM$, $m\angle JKL = 42^\circ$, and $m\angle LKM = 28^\circ$. Draw and label the diagram and use it to find $m\angle JKM$.

34) Ray BD bisects $\angle ABC$, $m\angle ABD = (6x + 4)^\circ$, and $m\angle DBC = (8x - 4)^\circ$. Draw and label the diagram and use it to find $m\angle ABD$.

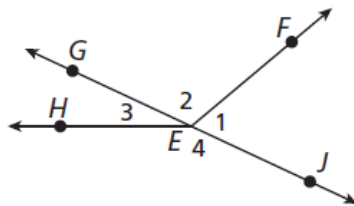
Tell whether the angles are only adjacent, adjacent and form a linear pair, or not adjacent.

35) $\angle 1$ and $\angle 2$

36) $\angle 2$ and $\angle 4$

37) $\angle 1$ and $\angle 3$

38) $\angle 2$ and $\angle 3$



For Exercises 39 - 44, use the figure at the right. Name an angle or angle pair that satisfies each condition.

39) Name two acute vertical angles.

40) Name two obtuse vertical angles.

41) Name a linear pair.

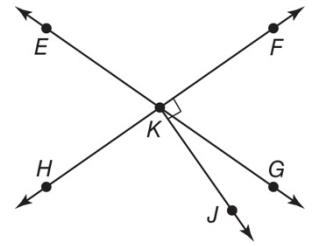
42) Name two acute adjacent angles.

43) Name an angle complementary to $\angle EKH$.

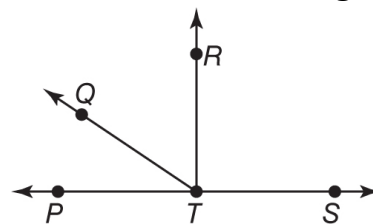
44) Name an angle supplementary to $\angle FKG$.

45) Find the measures of an angle and its complement if one angle measures 24 degrees more than the other.

46) The measure of the supplement of an angle is 36 less than the measure of the angle. Find the measures of the angles..



For Exercises 47 - 48, use the figure below.



47) If $m\angle RTS = 8x + 18$, find the value of x so that $\overline{TR} \perp \overline{TS}$

48) If $m\angle PTQ = 3y - 10$ and $m\angle QTR = y$, find the value of y so that $\angle PTR$ is a right angle.

*Chapter 2.1 Inductive Reasoning

49) Inductive Reasoning is used to draw a conclusion from _____.

50) A statement you believe to be true based on Inductive Reasoning is called a _____.

51) To show that a conjecture is true, you must _____ it.

52) To show that a conjecture is false, you can give a _____.

53) Complete each conjecture:

a. A pair of complementary angles have a sum of _____.

b. The square of any negative number is always _____.

54) Show that each conjecture is false by providing a counterexample:

a. Two angles that have the same *vertex* are adjacent.

b. If $x + 1 > 5$, then $x = 8$

*Chapter 2.4 Deductive Reasoning

55) Deductive Reasoning is used to draw a conclusions from given _____, _____, and _____.

*Chapter 2.6 Algebraic Proofs

State which property, postulate, definition, or theorem supports each statement below.

56) If R is in the interior of $\angle PQS$, then $m\angle PQR + m\angle RQS = m\angle PQS$.

57) If $\angle 1$ and $\angle 2$ are supplementary, then $m\angle 1 + m\angle 2 = 180^\circ$.

58) If $m\angle 1 = m\angle 2$ and $m\angle 2 = m\angle 3$, then $m\angle 1 = m\angle 3$.

59) If M is the midpoint of \overline{AB} , then $\overline{AM} \cong \overline{MB}$.

60) If $AB = CD$, then $AB + EF = CD + EF$.

61) $\angle 1$ and $\angle 2$ form a linear pair, then they are supplementary.

62) If $m\angle A + m\angle B = 90$, then $\angle A$ and $\angle B$ are complementary.

63) If \overline{BX} bisects $\angle ABC$, then $m\angle ABX = m\angle XBC$.

64) If $AM = MB$, then $\overline{AM} \cong \overline{MB}$.

65) **Complete the following Algebraic Proof by listing each step and providing its justification.**

1. $-2(x + 5) = -6$ 1. _____

2. _____ 2. _____

3. _____ 3. _____

4. _____ 4. _____

*Chapter 2.7 and 2.8 Geometric Proofs

PRACTICE ANY AND ALL PROOFS!!

Places to find proofs on Wroblewski's Website:

*Writing Algebraic Proofs and Proof Practice 09/29

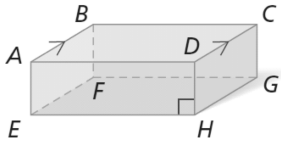
*Geometric Proof Notes and Practice 10/01

*Test Review for Test 2 10/15

*Test 2

***Chapter 3.1 Parallel Lines and Transversals**

Identify each of the following using the figure:



66) a pair of perpendicular segments

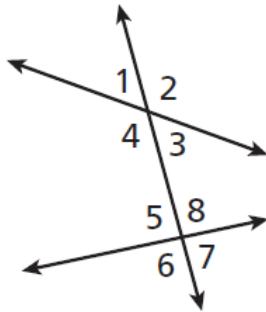
67) a pair of skew segments

68) a pair of parallel segments

69) a pair of parallel planes

Write **all** possible answers for each of the following:

70) alternate interior angles



71) alternate exterior angles

72) corresponding angles

73) same-side interior angles

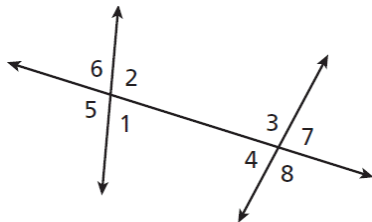
Identify the type of angle pair given:
(corresponding, alternate interior, alternate exterior, same side interior)

74) $\angle 6$ and $\angle 8$

75) $\angle 2$ and $\angle 3$

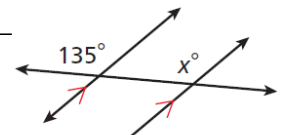
76) $\angle 2$ and $\angle 4$

77) $\angle 5$ and $\angle 4$

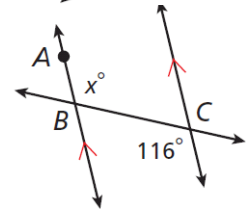


***Chapter 3.2 Angles and Parallel Lines**

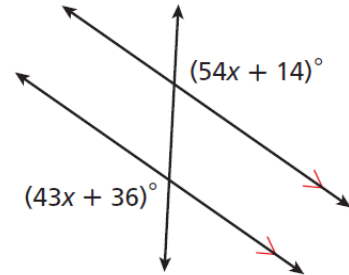
78) $x =$ _____



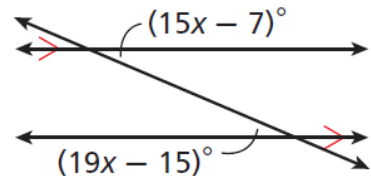
79) $x =$ _____



80) Solve for x and find the missing angle:



81) Solve for x and find the missing angle:



Use the figure to find the value of all the missing angles:

82) $\angle 1 =$ _____

83) $\angle 2 =$ _____

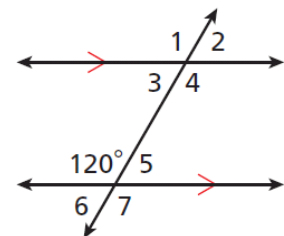
84) $\angle 3 =$ _____

85) $\angle 4 =$ _____

86) $\angle 5 =$ _____

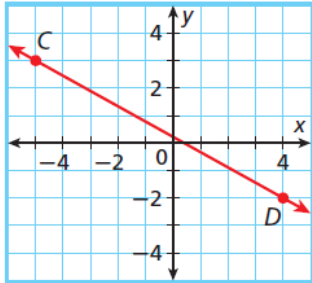
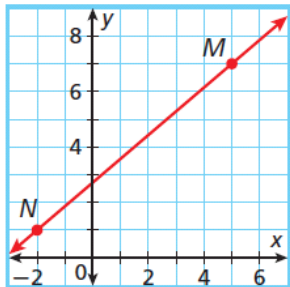
87) $\angle 6 =$ _____

88) $\angle 7 =$ _____



***Chapter 3.3 Slopes of Lines**

89) Find the slope of each given line. Say if it is positive, negative, zero or undefined.



Determine if the lines are parallel, perpendicular or neither by comparing their slopes.

- 90) $HJ: H(3, 2), J(4, 1)$ 91) $LM: L(-2, 2), M(2, 5)$
 $KM: K(-2, -4), M(-1, -5)$ $NP: N(0, 2), P(3, -2)$

***Chapter 3.4 Equations of Lines**

Sketch and write the equation of the line that:

92) passes through (4, 7) and (-2, 1) in slope-intercept form.

93) passes through (-4, 2) with slope $\frac{3}{4}$ in point-slope form.

For problems 94-96, determine whether the lines are parallel, intersect, or coincide.

94) $y = -3x + 4$ and $y = -3x + 1$

95) $6x - 12y = -24$ and $3y = 2x + 18$

96) $4x + 2y = 10$ and $y = -2x + 15$

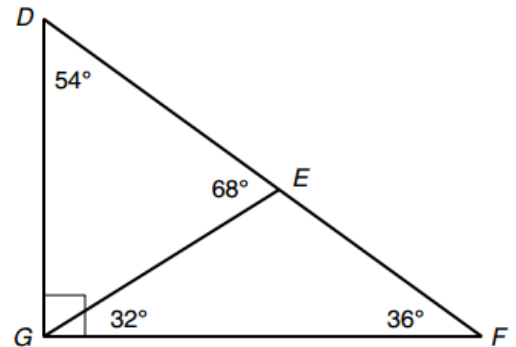
***Chapter 4.1 Classifying Triangles**

For problems 97-99, classify each triangle based upon its angle measures:

97) $\triangle DFG$

98) $\triangle DEG$

99) $\triangle EFG$

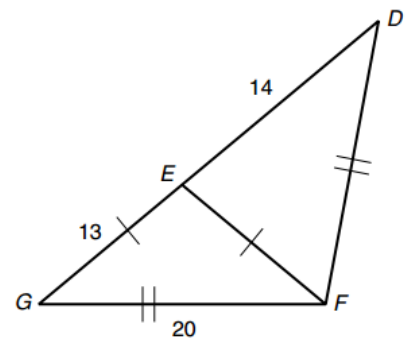


For problems 101-103, classify each triangle based upon its side lengths:

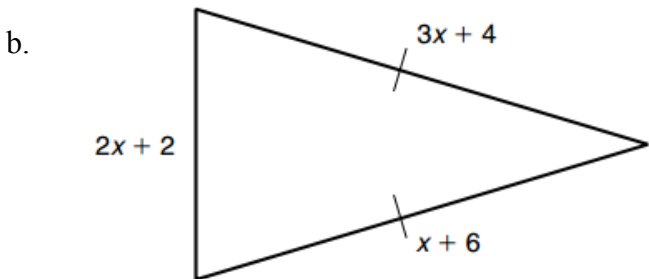
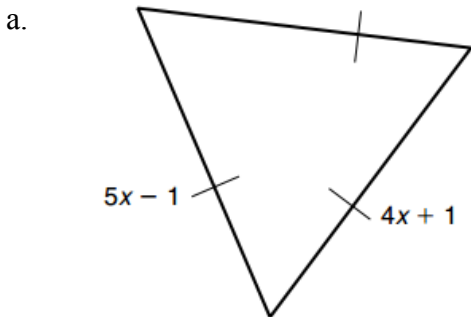
100) $\triangle EGF$

101) $\triangle DEF$

102) $\triangle DFG$



103) Find the side lengths of each triangle:



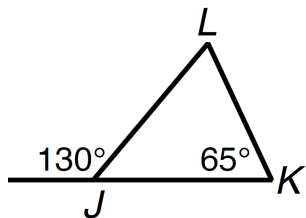
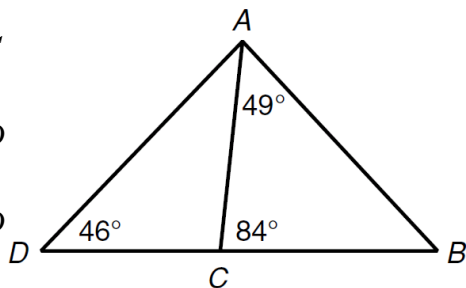
*Chapter 4.2 Angle Relationships in Triangles

104) Find $m\angle ABC$

105) Find $m\angle ACD$

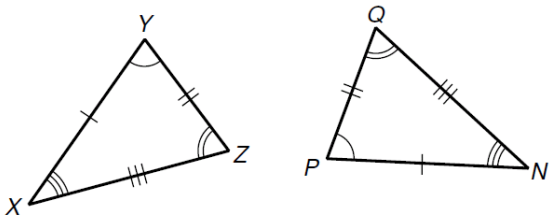
106) Find $m\angle CAD$

107) Find $m\angle L$



*Chapter 4.3 Congruent Triangles

Identify the congruent corresponding parts:



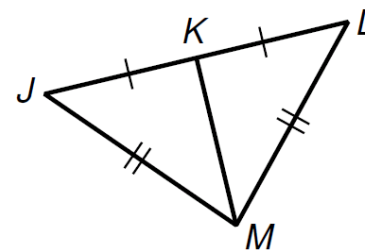
108) $\angle Z \cong$ _____ 109) $YZ \cong$ _____

110) $\angle P \cong$ _____ 111) $\angle X \cong$ _____

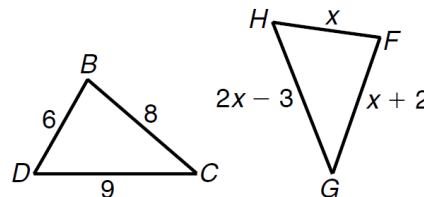
112) $NO \cong$ _____ 113) $PN \cong$ _____

*Chapter 4.4-4.5 SSS, SAS, ASA, AAS

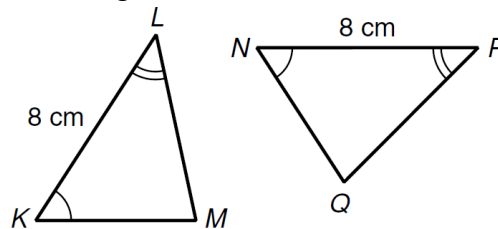
114) Explain why the two triangles are congruent.



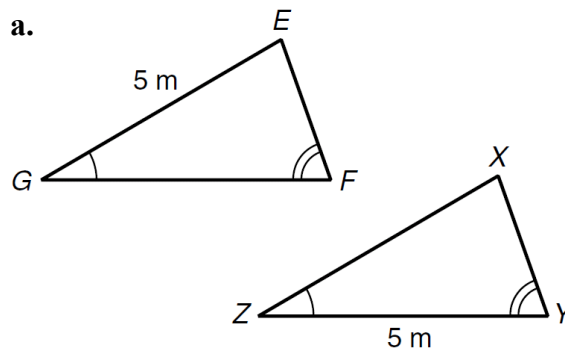
115) Show that the triangles are congruent when $x = 6$



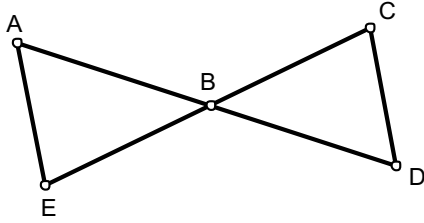
116) Use SSS, ASA, or AAS to determine if the triangles are congruent.



117) Determine if the triangles are congruent based upon the information given. Justify your answer.



118) Given: $\overline{AE} \parallel \overline{CD}$ and $\overline{AE} \cong \overline{DC}$
 Prove: $\triangle AEB \cong \triangle DCB$

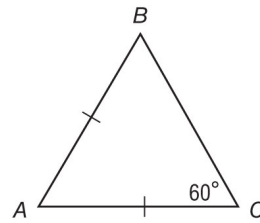


122) If $\angle EBA \cong \angle EAB$, name two congruent segments.

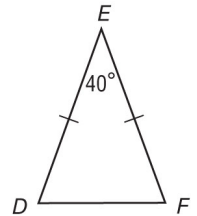
123) If $\angle CED \cong \angle CDE$, name two congruent segments.

Find each measure.

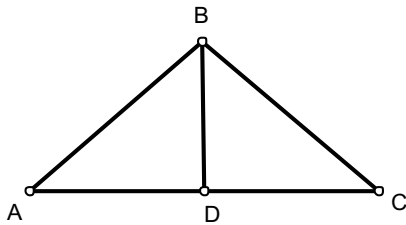
124) $m\angle ABC$



125) $m\angle EDF$

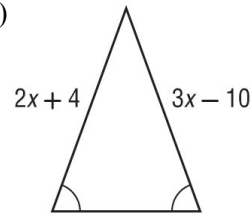


119) Given: \overline{BD} bisects $\angle ABC$ and $\overline{AB} \cong \overline{BC}$
 Prove: $\triangle ABD \cong \triangle CBD$

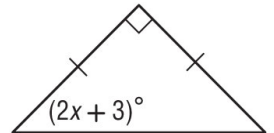


Find the value of each variable.

126)



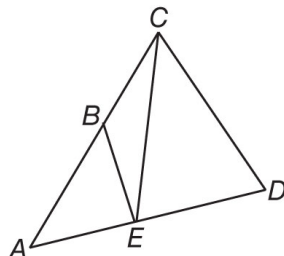
127)



*Chapter 4.6 Isosceles and Equilateral Triangles

For problem 120-123, refer to the figure below.

120) If $\overline{AC} \cong \overline{AD}$, name two congruent angles.



121) If $\overline{BE} \cong \overline{BC}$, name two congruent angles.