Geometry Midterm Review 2016 - 2017
Vocabulary:

1. Points that lie on the same line.   1. _____
2. Having the same size, same shape   2. _____
3. These are non-adjacent angles formed by intersecting lines.   3. _____
4. Point that divides a segment into 2 congruent segments   4. _____
5. Two angles whose measures have a sum of 90°.   5. _____
6. Two angles whose measures have a sum of 180°.   6. _____
7. Segment in a triangle connecting the vertex to the midpoint of the opposite side
    7. _____
8. To divide into two congruent parts.   8. _____
9. A triangle with no congruent sides   9. _____
10. This is the common endpoint of an angle.   10. _____
11. Points do not lie on the same line.   11. _____
12. Part of a line consisting of two points and all points between them   12. _____
13. The process of using logic, rules, definitions to draw conclusions   13. _____
14. A triangle with at least 2 congruent sides   14. _____
15. The process of reasoning that a rule or statement is true because specific cases are true (patterns)
    15. _____
16. An angle that measures greater than 0° and less than 90°   16. _____
17. A line that intersects two coplanar lines at two different places   17. _____

Using the figure at the right:

18. Name 3 coplanar points:

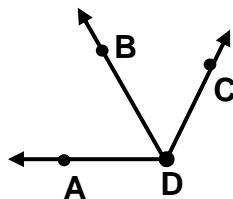19. Name 3 collinear points:

20. Name the intersection of the planes
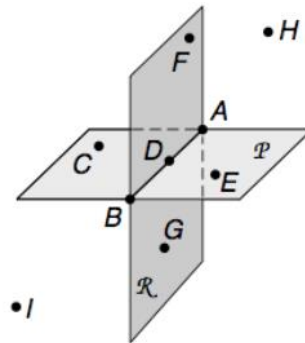
21. Use the figures to determine the correct geometric notation for the following figures:
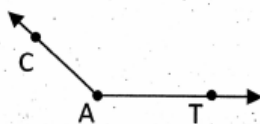
22. R is between S and T. If SR = 2x + 2, RT = x, and ST = 20. Find SR.

23. If DB bisects ∠ADC, m∠ADB= (3x + 6)°, and m∠BDC = (5x –4)°, find 'x'.
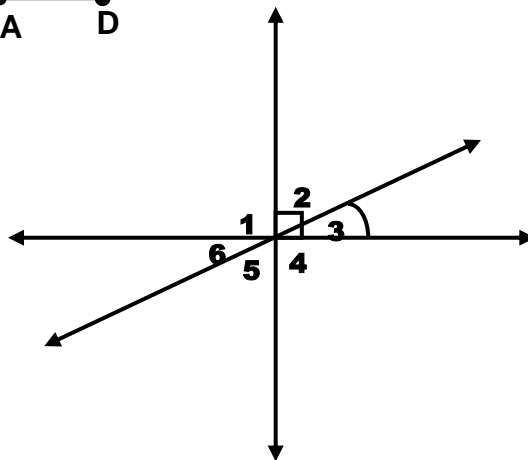
24. In the diagram, name a pair of:

      supplementary angles: _____
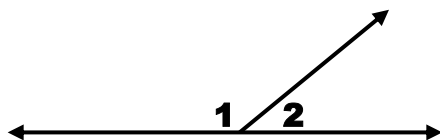
      vertical angles: _____

      complementary angles: _____

      adjacent angles: _____

25. In the diagram, m∠1 = (2x + 15)° and m∠2 = (x + 45)°. The value of 'x' is:

26. Find the complement and supplement of 82°.

27. Identify the following statement as an example of inductive or deductive reasoning:

"I have had strep throat every winter for the past 3 years, I will probably have strep throat this winter."

28. Find the next two terms in each of the sequences.

2, 4, 16, _____, _____   100, 81, 64, 49, _____, _____

29. Write the following as a conditional statement: **A dog has fur**

30. Identify the hypothesis and conclusion of the conditional statement.
   If it is snowing than it is cold.

Hypothesis: _____

Conclusion: _____

31. Use the following conditional and write:
   If an angle is acute then it is less than 90°.

Converse (q→ p):_____

Inverse (~p → ~q): _____

Contrapositive (~q→ ~p): _____

Biconditional (if and only if): _____

32. Give a counterexample to show that the following statement is false:
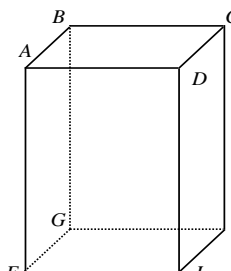   "If Alex does all of her homework, then she will pass geometry."

33. Using the figure to the right, list the segments that are:

   skew to $\overline{AB}$

   parallel to $\overline{AB}$

   perpendicular to $\overline{AB}$

34. In the figure, identify a pair of:
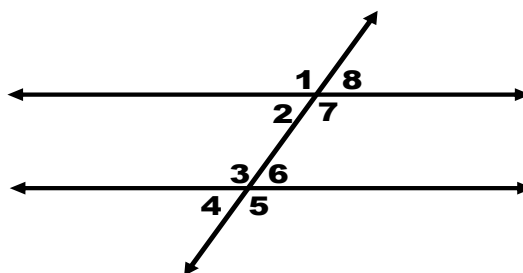
   alternate interior angles: _____

   vertical angles: _____
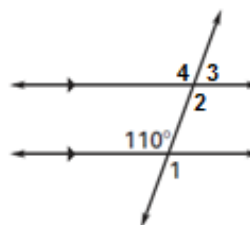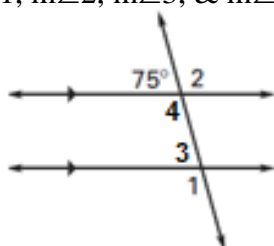
   corresponding angles: _____

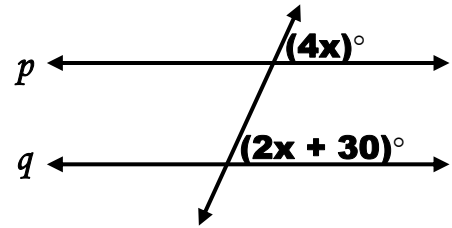   alternate exterior angles: _____

   same side interior angles: _____

   linear pair: _____

35. Find the m∠1, m∠2, m∠3, & m∠4 on each of the following

36. Given the diagram, if lines p and q are parallel, solve for x.

$(4x)°$

p

$(2x + 30)°$

q

37. Find the value of 'x' so that lines p and q are parallel.

p

$(8x)°$

$(2x)°$

q
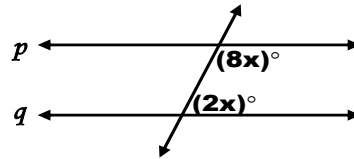
38. Use the distance formula to find the distance between
    A (5, -2) and W (-1, 7).

39. Find the midpoint of (8, -2) and (4, -6).

40. Find the slope of the given points. (-6, -8) and (-4, -2)

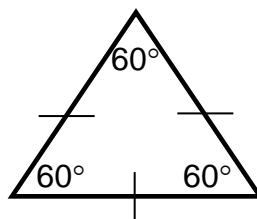41. What is the slope of the line that is perpendicular to the line whose equation is 3x- 2y = -8?

42. What is the slope of a line parallel to the line 8x - 2y = 10?

43. What is the relationship between the lines: $y = 3x - 2$ and $-6x + 2y = -4$?
        (parallel, perpendicular, or coinciding lines)
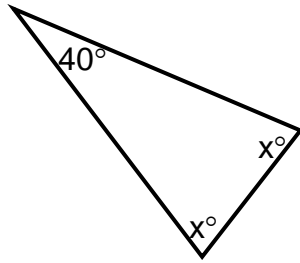
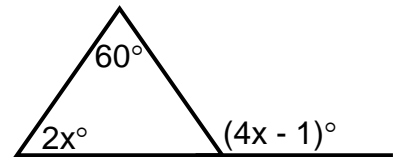44. How should Annette classify this triangle?
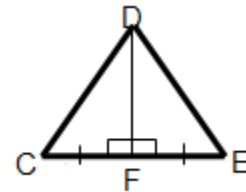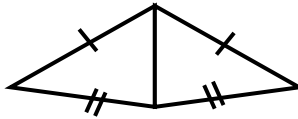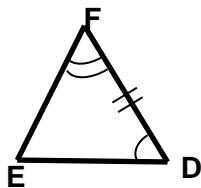
    By sides: _____

    By angles: _____

$60°$

$60°$ $60°$

45. Solve for x:

$40°$

$x°$

$x°$

46. Solve for x:

$60°$

$2x°$ $(4x - 1)°$

47. Which postulate or theorem can be used to prove the following triangles are congruent?

B.

F

A.

B   E   D

D

C   F   E

_____   _____   _____
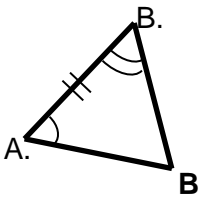
48. Complete the congruent statement and state which postulate or theorem can be used to prove the 2 triangles congruent.   ΔJKL ≅ Δ_____

J

M

K

L

N
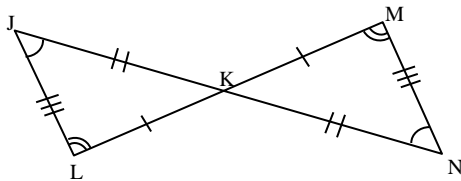
49. Name one additional pair of corresponding parts that need to be congruent in order to prove that ΔFIG ≅ ΔTOM

by AAS: _____   by ASA: _____   by SAS: _____

I

F

G

T

M   O

50. Given $\triangle QRS \cong \triangle TUV$, $QS = 4x - 5$ and $TV = 9x - 20$, find the length of QS and TV.

51. Find the value of x. The diagram is not to scale.

40

x

40

32

25   25

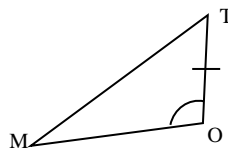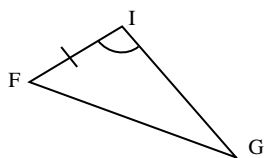52. Which side is the longest side in this triangle?

53. In △ ABC, which is the smallest angle? Draw the triangle first!!

$$AB = 17, BC = 21, AC = 18$$

54. Which three lengths could be the lengths of the sides of a triangle?

   a. 10m, 5m, 12m   b.10m, 16m, 26m   c. 8m, 12m, 21m   d. 20m, 7m, 6m

55. The measure of two sides of a triangle are 11 and 20. Using an inequality, what is the range of the third side?

56. The measure of two sides of a triangle are 8 and 23. Using an inequality, what is the range of the third side?

Solve the following equations.

57. $-257 = 8(1 + 7x) - 3x$ 58. $5k - 5(1 + 5k) = -33 - 6k$ 59. $-8(1 + 3x) = -2 + 36$

60. **Given: 2(p + 15) = 4p + 6**
    Prove: p = 12

Statements	Reasons
2(p + 15) = 4p + 6	