Name _____

Geometry CP SUMMER ASSIGNMENT

Please complete the following assignment due on the first Friday of school. The assignment will be collected, graded, and count towards 30 points on your first test, which will be at the end of the first unit. Use all of your available resources: old notes, or the Internet. Make a note of your questions to ask in September.

Complete the following worksheets. You may use the websites listed below to assist you in completing this assignment.

http://faculty.unlv.edu/bellomo/Math120/Notes/Ch10-Sect1.pdf

https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-geometry/line-segment-algebra/v/segment-addition

https://www.youtube.com/watch?v=prtUJyK98SY

If you have any questions over the summer, please email **both** your teacher and the Supervisor of Mathematics & Science:

Ms. Eisen (Teacher): deisen@dumontnj.org
Mrs. Sullivan (Teacher): dsullivan@dumontnj.org
Ms. Warnock (Supervisor of Mathematics & Science): dwarnock@dumontnj.org

HAVE A GREAT SUMMER!!

ALGEBRA REVIEW

1) Simplify the expression.

   a) $5x + 8 - 9x$ b) $-12y - y + 2$

   c) $4 + z + z - 5$ d) $x^2 + 2x - 6x - 12$

   e) $4y - (y + 6)$ f) $2(x - 5) + 13$

   g) $a(a + 2) - 5(a - 3)$ h) $(c + 8)(-5)$

   i) $2x - y + 2x + 3xy$ j) $-2(c - d) + (c - d) - 6(c - d)$

2) Solve the equation.

   a) $x - 14 = 18$ b) $4(x + 4) = 3(x - 1)$

   c) $8 - 7x = x$ d) $2n - 1 = 5n + 8$

   e) $\dfrac{n}{5} = 7$ f) $-\dfrac{2}{3}z = 22$

   g) $\dfrac{x}{8} - 2 = -13$ h) $8 = \dfrac{1}{2}x + 6$

3) Solve each of the following proportions.

   a) $\dfrac{x}{2} = \dfrac{7}{14}$ b) $\dfrac{5}{7} = \dfrac{y + 1}{21}$ c) $\dfrac{27}{x - 5} = \dfrac{3}{2}$

4) Solve each word problem by writing an equation and solving it.

   a) The sum of a number and twice the number is 18. Find the number.

   b) Eight times a number equals 35 more than the number. Find the number.

   c) Three times the sum of 13 and a number is the same as 7 times the number decreased by 9. What is the number?

5) Solve each equation for the specified values.
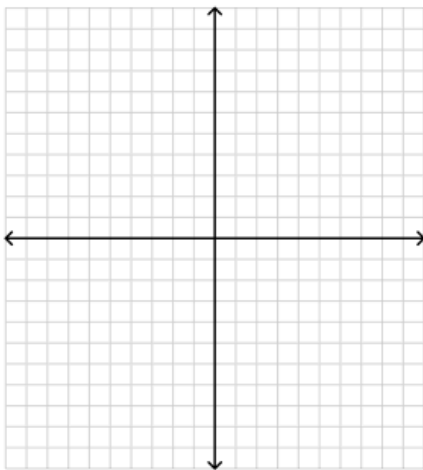
   a) Solve for b.

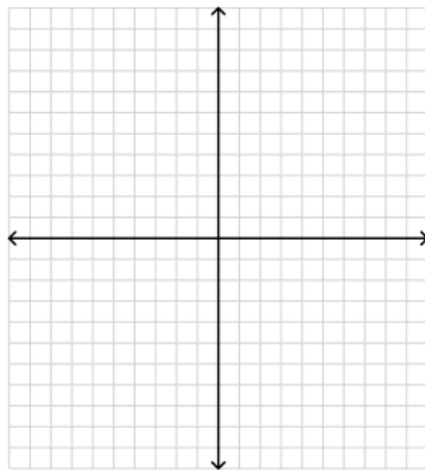 $5a - 6b = 9$

   b) Solve for e.

   $de - 4f = 5g$

   c) Solve for v.

   $\dfrac{u - v}{w} = 4$

6) Graph each equation.

   a) $y = -3x + 2$

   b) $y = -5$

   c) $x = 4$
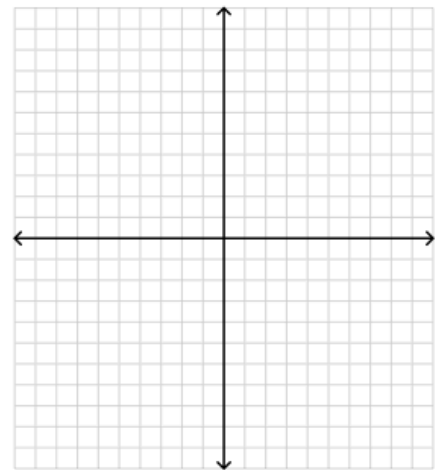
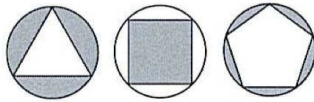## SECTION 1.1 – FINDING AND DESCRIBING PATTERNS

7) Describe the pattern (in words) and write the next two numbers you expect:

24, 17, 10, …

7) Description: _____

   Next two numbers: _____, _____

8) Describe the pattern (in words) and write the next two numbers you expect:

2, 4, 8, …

8) Description: _____

   Next two numbers: _____, _____

9) Draw the next two figures in the pattern.

9)

SECTION 1.2 – INDUCTIVE REASONING

10) "The product of two even numbers is always ___."

   a) Fill in the blank to make the sentence above a true statement.
   b) Give 4 examples that prove it is true.

10) a) Fill in the blank: _____

   b) Four examples: _____, _____

   _____, _____

11) Prove that the conjecture below is false by writing a counterexample (in a complete sentence).

"All vegetables are green."

11) Counterexample: _____

_____

12) Prove that the conjecture below is false by writing a counterexample (in a complete sentence).

"Any number multiplied by an odd number gives you an odd answer."
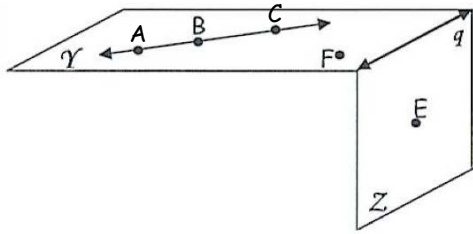
12) Counterexample: _____

_____

SECTION 1.3 – POINTS, LINES, AND PLANES

Use the diagram below to answer each question.

13) Name 3 points.   13) _____, _____, _____

14) Name 2 lines.   14) _____, _____

15) Name 1 plane.   15) _____

16) Name 3 points that are collinear.   16) _____, _____, _____

17) Name 1 point that is NOT collinear with A and B. 17) _____

18) Name 4 non-coplanar points.   18) _____, _____, _____, _____

19) Name 2 coplanar lines.   19) _____, _____

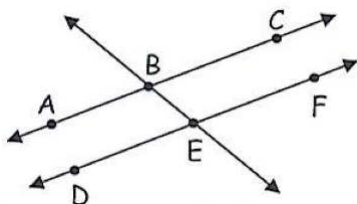Use the diagram below to answer each question.
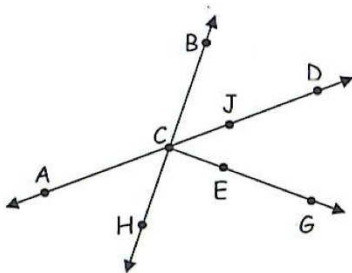
20) Name 2 segments with G as an endpoint.   20) _____, _____

21) Name 2 rays with J as an endpoint.   21) _____, _____

SECTION 1.4 – SKETCHING INTERSECTIONS

Use the diagram below to answer each question.

22) Name the intersection of $\overleftrightarrow{BE}$ and $\overleftrightarrow{DF}$.

22) _____

23) Name the intersection of $\overleftrightarrow{AC}$ and $\overleftrightarrow{DF}$.

23) _____

24) Complete the sentence: "The intersection of two planes is always a _____.

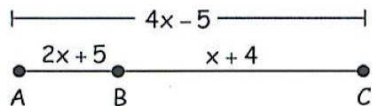24) _____

25) Draw a line intersecting a plane at a point.

25)

26) Draw a line that does NOT intersect a plane.

26)

SECTION 1.5 – SEGMENTS AND THEIR MEASURES
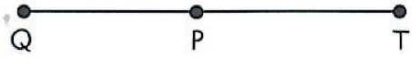
Use the diagram below to answer each question.

27) Write the Segment Addition Postulate for the following diagram (using segment names).

27) _____ + _____ = _____

28) Solve for x.

28) $x =$ _____

In the diagram below, P is between Q and T.

Q   P   T

29) Find QT if PQ = 8 and PT = 3.   29) QT = _____

30) Find QP if PT = 10 and TQ = 13.   30) QP = _____

31) Find the following distances on a number line.

   a) Find FG if F = 3 and G = 15.   31) a) FG = _____

   b) Find MN if M = -14 and N = 2.   b) MN = _____

32) Graph G(-1, 4), E(3, 4), O(-4, 3), and M(-4, 1).   32)
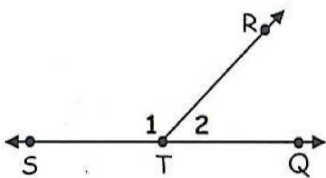   Then determine if $\overline{GE} \cong \overline{OM}$.
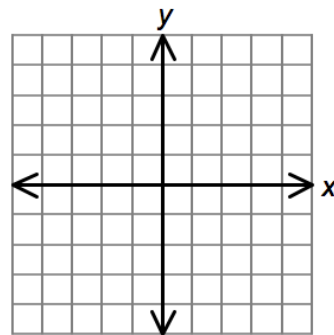
Is $\overline{GE} \cong \overline{OM}$? (Yes or no?): _____

SECTION 1.6 – ANGLES AND THEIR MEASURES

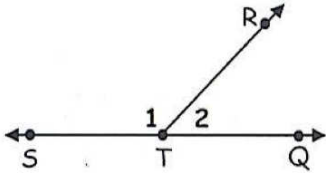Use the diagram below to answer each question.

33) Use the letters to name $\angle 1$.   33) _____

34) Use the letters to name $\angle 2$.   34) _____

Use the diagram below to answer each question.

35) Name the vertex and sides of ∠1.

36) Name an acute angle.

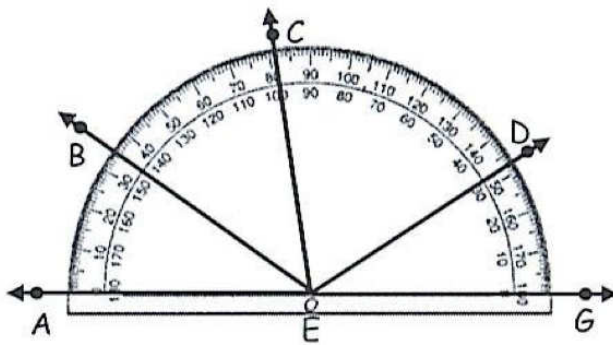37) Name an obtuse angle.

38) Name a straight angle.

35) Vertex: _____ Sides: _____, _____

36) _____

37) _____

38) _____

Use the diagram below to answer each question.

39) Find $m\angle AEB$.

40) Find $m\angle AEC$.

41) Find $m\angle AED$.

42) Find $m\angle GEC$.

43) Find $m\angle GED$.

44) Find $m\angle GEB$.

45) $m\angle AEB + m\angle BEC = $ _____

46) $m\angle DEB - m\angle DEC = $ _____

39) $m\angle AEB = $ _____

40) $m\angle AEC = $ _____

41) $m\angle AED = $ _____

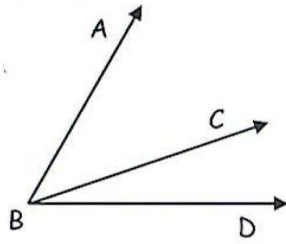42) $m\angle GEC = $ _____

43) $m\angle GED = $ _____

44) $m\angle GEB = $ _____

45) $m\angle AEB + m\angle BEC = $ _____

46) $m\angle DEB - m\angle DEC = $ _____

47) Solve for x.

$m\angle ABC = (2x+3)°$
$m\angle CBD = (3x-5)°$
$m\angle ABD = 58°$

47) $x =$ _____

CHAPTER 1 – VOCABULARY REVIEW

Choose the word from the word bank that best completes each statement. Each word is used only once.

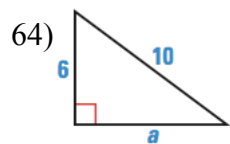|				
Acute	Angle	Collinear	Congruent	Conjecture
Coordinate	Coplanar	Counterexample	Obtuse	Plane
Ray	Right	Segment	Straight	Vertex

48) A/An _____ is formed by two rays joined at the same point.

49) _____ angles measure 180°

50) A/An _____ angle is an angle that measures more than 90° but less than 180°.

51) A/An _____ has one endpoint and one end that extends forever.

52) _____ angles measure exactly 90°.

53) The endpoint of two rays joined together to form an angle is called the _____.

54) An example showing that a statement is not always true is called a/an _____.

55) A/An _____ has two endpoints.

56) _____ angles measure less than 90°

57) A/An _____ is a statement based on a pattern or observation.

58) If A, B, and C lie on the same line, then A, B, and C are _____.

59) Two segments that have the same length are called _____ segments.

60) The number that corresponds to a point is called its _____.

61) A/An _____ is a flat surface that extends indefinitely in all directions.

62) If A, B, C, and D lie on the same plane, then A, B, C and D are _____.

SECTION 9.2 – THE PYTHAGOREAN THEOREM

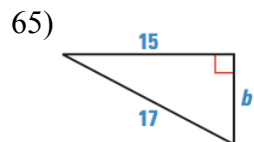Use the Pythagorean Theorem to solve for each
unknown side length.

63)

63) $c =$ _____

64)

64) $a =$ _____

65)

65) $b =$ _____