**Section 1.1: Identify Points, Lines, and Planes**
- ✓ Review pages 2 – 5 of your textbook.
- ✓ You should be able to name points, lines, planes, segments, rays, and opposite rays.
- ✓ You should be able to identify intersections of lines and planes.

1. Using the diagram below, name an example of:
    a) three collinear points

    b) two other names for $\overleftrightarrow{CD}$.

    c) another name for plane J.

    d) the intersection of plane J and $\overleftrightarrow{KF}$.

    e) a point that is noncoplanar with B, G, and K.

    f) a pair of opposite rays.

    g) an angle.

    h) another name for $\overline{BC}$.
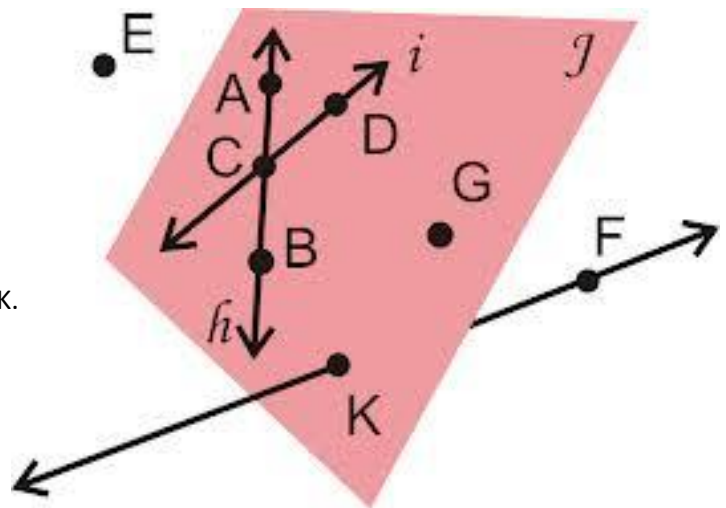
2. $\overrightarrow{PR}$ is represented by which sketch?

    a)

    b)

    c)

    d)
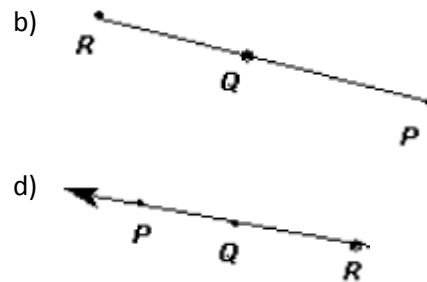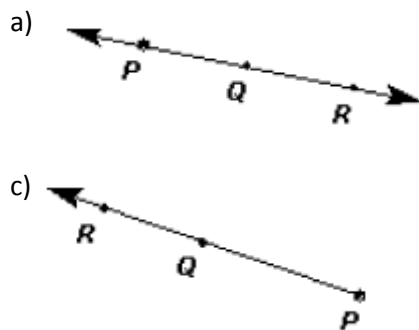
3. Draw four points, *A, B, C,* and *D*, on a line so that $\overrightarrow{AC}$ and $\overrightarrow{AB}$ are opposite rays and $\overrightarrow{AC}$ and $\overrightarrow{AD}$ are the same ray.

4. What do $\overrightarrow{PQ}$ and $\overrightarrow{QP}$ have in common? (HINT: Draw a picture!)

Section 1.2: Use Segments and Congruence

✓ Review pages 9 – 11 of your textbook.
✓ You should be able to find length of a segment using the Ruler Postulate and the Segment Addition Postulate.
✓ Compare segments to identify congruent segments.

5. The notation for the length of the segment between P and Q is _____.

   a) $\overleftrightarrow{PQ}$ b) $\overline{PQ}$ c) $\overrightarrow{QP}$ d) PQ

6. In the diagram below, R is between Q and S. If RS = 44 and QS = 68, find QR.

   Q   R   S
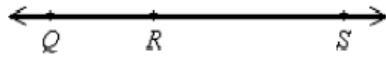
   a)   14   b) 44   c) 112   d) 24

7. Let C be between D and E. Use the Segment Addition Postulate to solve for v. (It may be helpful to draw a diagram ☺)

   DC = 3v – 30
   CE = 6v – 15
   DE = 27

   a) v = 3   b) v = 11   c) v = -5   d) v = 8

8. R, S and T are collinear. S is between R and T. RS = 2w + 1, ST = w -1, and RT = 18. Find the length of $\overline{RS}$. (It may be helpful to draw a diagram ☺)
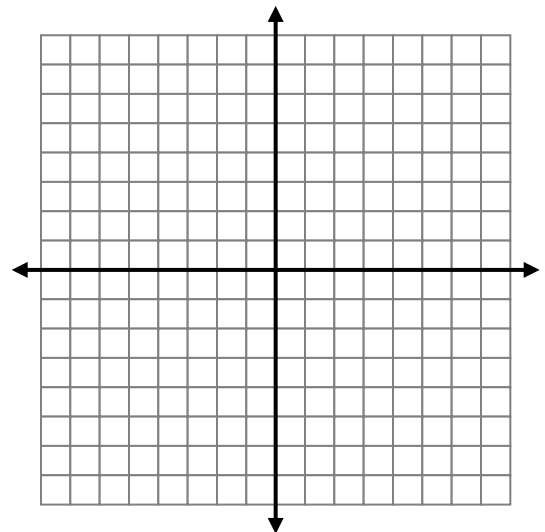
   a)   16   b) 5   c) 13   d) 6

9. Given AC = 75 in the diagram below, find the values of x, AB, and BC.

   A x^2-6x+30   B   x - 5   C

10. Plot the following points in a coordinate plane: A(-2, 2), B(3, 2), C(-2, -4) and D(3, -4).

    a) Is $\overline{AB} \cong \overline{CD}$? Explain.

    b) Is there another pair of congruent segments? If so, name the segments and explain why they are congruent.

**Section 1.3: Use Midpoint and Distance Formulas**
- ✓ Review pages 15 – 18 of your textbook.
- ✓ YOU WILL NOT BE GIVEN THE FORMULAS ON THE QUIZ!!! MAKE SURE YOU STUDY THEM!!!
- ✓ You should be able to distance formula to find lengths of segments.
- ✓ You should be able to use the midpoint formula to find the midpoint of a segment in the coordinate plane, or identify a missing endpoint given the midpoint and one endpoint.
- ✓ You should be able to identify and use segment bisectors to solve problems.

11. T is the midpoint of $\overline{PQ}$. Which one of the following is *not* an appropriate statement?

    a) $PT = TQ$ b) $\overline{PT} = \overline{TQ}$ c) $\overline{PT} \cong \overline{TQ}$ d) $PT + TQ = PQ$

12. B is the midpoint of $\overline{AC}$. Find x, AB, BC, and AC if AB = 2x – 8 and BC = x + 17. (Draw a diagram ☺)

13. B is the midpoint of $\overline{AC}$. Find x, AB, BC, and AC.

$5(2x + 2)$
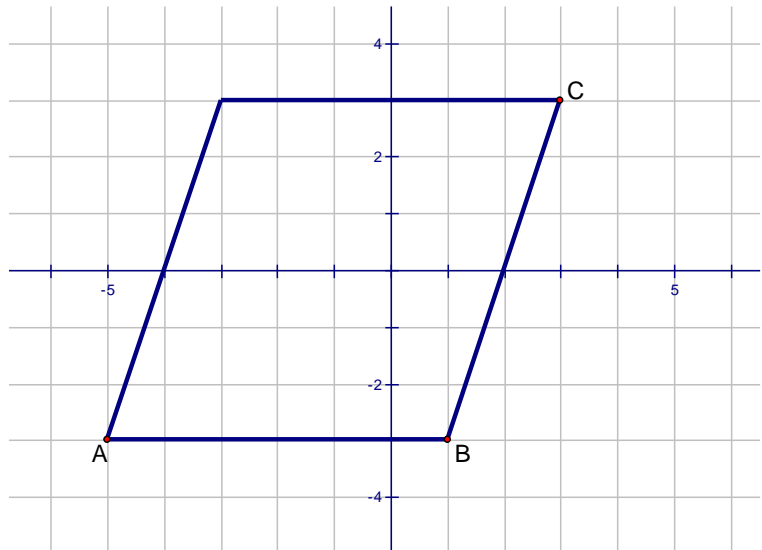
$3(3x - 1)$

A   B   C
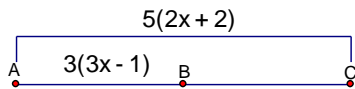
14. Find the midpoint of the segment with endpoints (9, 8) and (3, 5).

    a) (3, 3/2)   b) (12, 13)   c) (6, 13/2)   d) (1, -2)

15. The diagonals of parallelogram *ABCD* have a common midpoint. Which of the following is the midpoint of the diagonals of *ABCD*?

    a) (4, 0)

    b) (-1, 0)

    c) (4, 3)

    d) (-1, 3)

16. The midpoint of $\overline{JK}$ is M(-2, -2). One endpoint is J(4, 3). Find the coordinates of the other endpoint.

17. Given points W(1, 3), X(7, 1), Y(5, 1) and Z(2, 4), find the length of $\overline{WY}$ and $\overline{XZ}$ in simplest radical form.   Is $\overline{WY} \cong \overline{XZ}$? Explain.
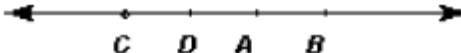
18. Determine the coordinates of the midpoint of $\overline{GH}$ and find GH in simplest radical form, given the points G(-6, -7) and H(3, 6).

19. The positions of two airplanes approaching an airport are plotted in a coordinate plane with the airport located at (0, 0). The locations of the planes are given by the coordinates (-3, 3) and (-5, 5). Each grid square is 1 mile wide. How far apart are the approaching planes? Round your answer to the nearest tenth of a mile.

ANSWER KEY:

1. a) A, B, C   b) line i, $\overleftrightarrow{DC}$ c) Any combination of THREE of the following letters: A, B, C, D, G, K
   d) K   e) E or F   f) $\overrightarrow{CA}$ and $\overrightarrow{CB}$ g) ∠ACD, ∠DCA, ∠DCB, ∠BCD   h) $\overrightarrow{BA}$

2. c

3. Sketches may vary. Sample sketch:

4. They have all of the points on $\overline{PQ}$ in common.

5. d   6. d   7. d   8. c   9. x = 10, AB = 70, BC = 5

10. a) Yes, because each has a length of 5 units.
    b) Yes. Sample answer: $\overline{AC} \cong \overline{BD}$ because each has a length of 6 units

11. b   12. x = 25, AB = 42, BC = 42, and AC = 84   13. x = 2, AB = 15, BC = 15, and AC = 30

14. c   15. b   16. (-8, -7)

17. $WY = 2\sqrt{5}$, $XZ = \sqrt{34}$; No they are not congruent because they do not have the same length.

18. $\left(-\dfrac{3}{2}, -\dfrac{1}{2}\right)$, $GH = 5\sqrt{10}$ 19.   2.8 miles