Name _____   Date _____

1. Use the coordinate plane to answer the questions.

   a. Use a straightedge to construct a line that goes through points A and B. Label the line g.

   b. Line g is parallel to the _____-axis and is perpendicular to the _____-axis.

   c. Draw two more points on line g. Name them C and D.

   d. Give the coordinates of each point below.

   A: _____ B: _____

   C: _____ D: _____

   e. What do all of the points on line g have in common?

   f. Give the coordinates of another point that falls on line g with an x-coordinate greater than 25.
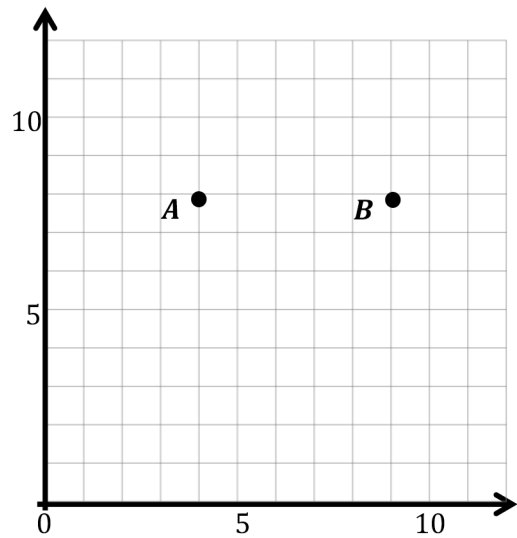
2. Plot the following points on the coordinate plane to the right.

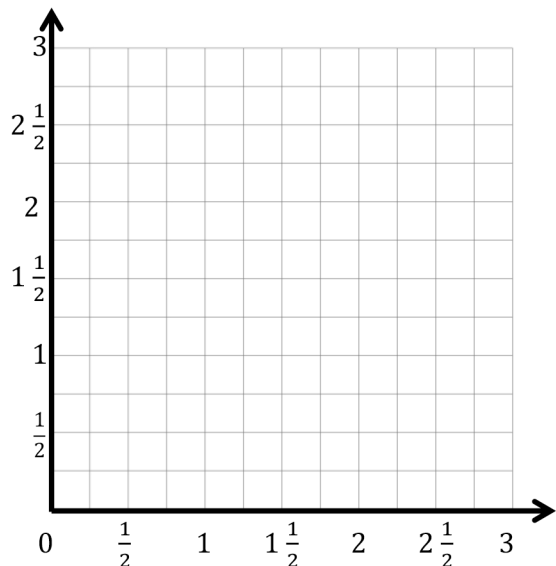 H: $(\frac{3}{4}, 3)$ I: $(\frac{3}{4}, 2\frac{1}{4})$

   J: $(\frac{3}{4}, \frac{1}{2})$ K: $(\frac{3}{4}, 1\frac{3}{4})$

   a. Use a straightedge to draw a line to connect these points. Label the line f.

   b. In line f, $x =$ _____ for all values of y.

   c. Circle the correct word:

   Line f is *parallel*   *perpendicular* to the x-axis.

   Line f is *parallel*   *perpendicular* to the y-axis.

   d. What pattern occurs in the coordinate pairs that make line f vertical?

3. For each pair of points below, think about the line that joins them. For which pairs is the line parallel to the x-axis? Circle your answer(s). Without plotting them, explain how you know.

    a. (3.2, 7) and (5, 7)   b. (8, 8.4) and (8, 8.8)   c. ($6\frac{1}{2}$, 12) and (6.2, 11)

4. For each pair of points below, think about the line that joins them. For which pairs is the line parallel to the y-axis? Circle your answer(s). Then, give 2 other coordinate pairs that would also fall on this line.

    a. (3.2, 8.5) and (3.22, 24)   b. $(13\frac{1}{3}, 4\frac{2}{3})$ and $(13\frac{1}{3}, 7)$ c. (2.9, 5.4) and (7.2, 5.4)

5. Write the coordinate pairs of 3 points that can be connected to construct a line that is $5\frac{1}{2}$ units to the right of and parallel to the y-axis.

    a. _____   b. _____   c. _____

6. Write the coordinate pairs of 3 points that lie on the y-axis.

    a. _____   b. _____   c. _____

7. Leslie and Peggy are playing *Battleship* on axes labeled in halves. Presented in the table is a record of Peggy's guesses so far. What should she guess next? How do you know? Explain using words and pictures.

$(5, 5)$	miss
$(4, 5)$	hit
$(3\frac{1}{2}, 5)$	miss
$(4\frac{1}{2}, 5)$	miss

Answer Key

1. a. Line g drawn and labeled

   b. x-axis, y-axis

   c. Answers will vary.

   d. A (4, 8); B (9, 8); points C and D will vary.

   e. y-value

   f. Answers will vary.

2. Points plotted correctly

   a. Line f drawn and labeled

   b. $\frac{3}{4}$

   c. perpendicular, parallel

   d. Answers will vary.

3. (a) circled; explanations will vary.

4. (b) circled; answers will vary.

5. Answers will vary.

6. Answers will vary.

7. Answers will vary.