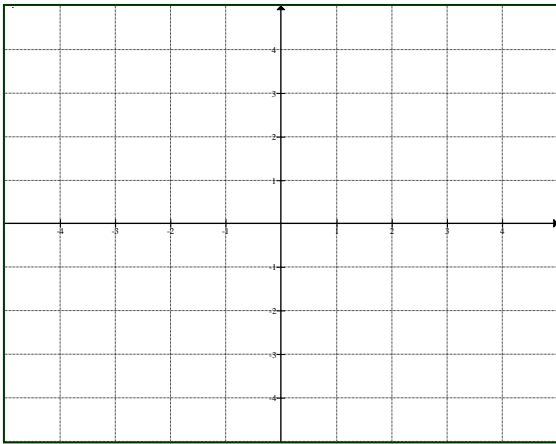# Graphing 6th Grade Chapter Questions
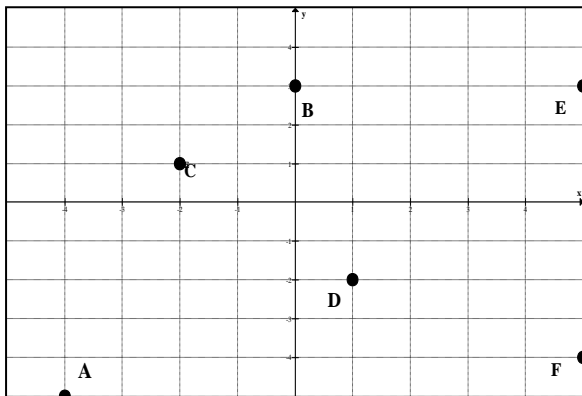
1. What is the Cartesian (Coordinate) plane?

2. How is the Cartesian plane divided?

3. How are ordered pairs graphed?

Cartesian Plane
Classwork

1. Label the quadrants, the origin, and the x-axis and y- axis.

2. In what quadrant or axis is each point located?
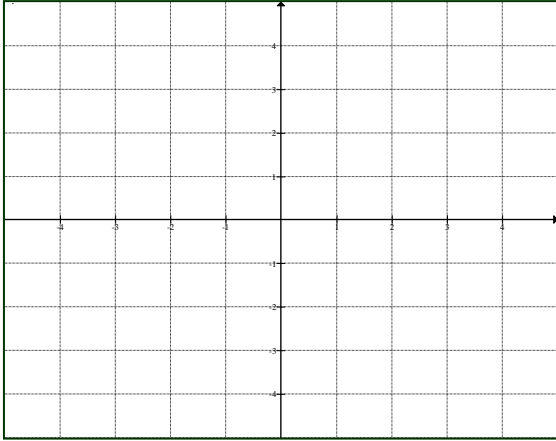

A _____   D _____

B _____   E _____

C _____   F _____
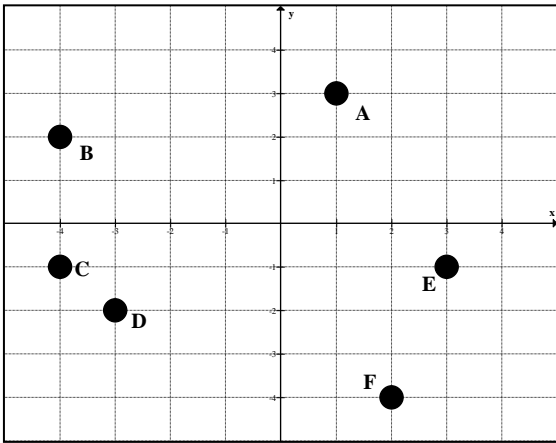
Homework

3. Label the quadrants, the origin, and the x-axis and y- axis.

4. In what quadrant is each point located?
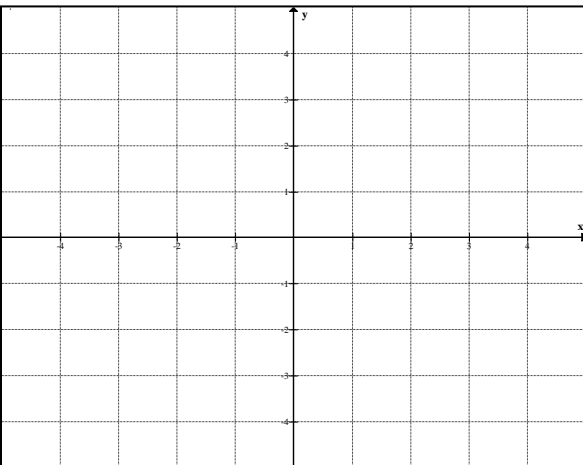

A _____   D _____

B _____   E _____

C _____   F _____

Graphing Ordered Pairs
Classwork

5. Plot a point and label it with the letter in each location indicated.

A Quadrant III
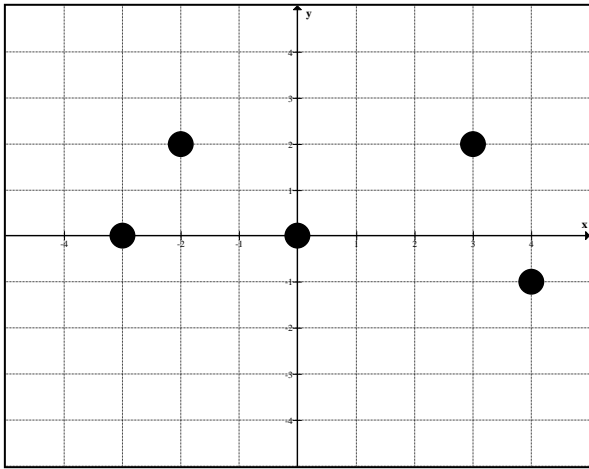**B** Quadrant I
C Quadrant II
D Quadrant IV
E Origin
F x – axis
G y – axis

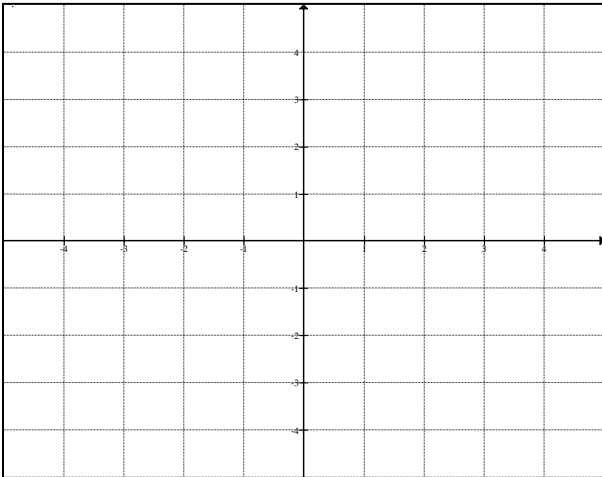6. Write the coordinates of each point on the graph.

Label the point in quadrant I, **A** ____

Label the point in quadrant IV, **B** ____

Label the point in quadrant II, **C** ____

Label the point on the x – axis, **D**____

What is the point that is not labeled? ____

7. Plot and label the following points:

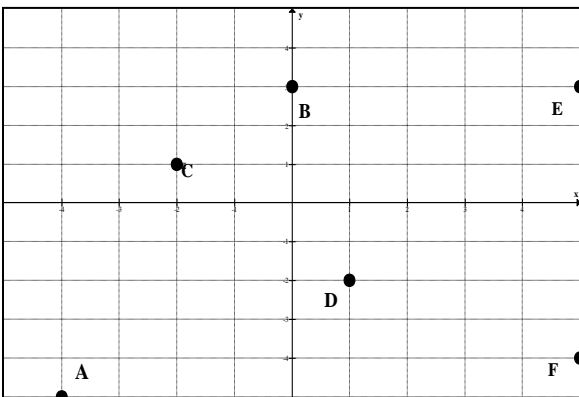A (2, 1.5)   F (0, 4)

B (1, 2)   G (4, 0.25)

C (-4, -2 1/2)   H (-2, 0)

D (-3, 1)   I (0, - 3)

E (5, -2)   J (3, - 3)

8. Name the coordinates of each point.

A ____   D _____

B ____   E _____
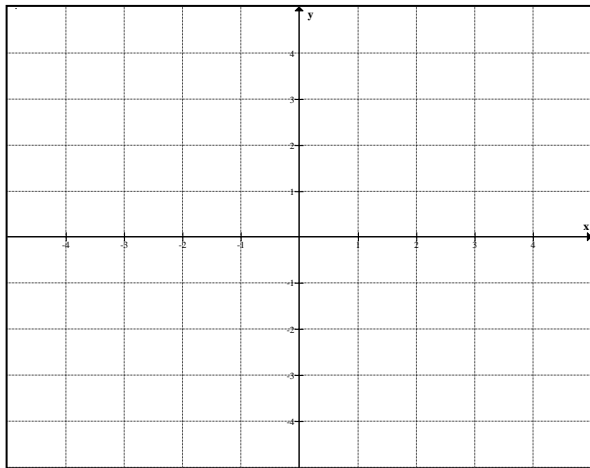
C ____   F _____

9. Reflect each of the coordinates (in the previous problem) over the x and y axis. Write the new coordinates below.

Reflect over x   Reflect over y

A _____   _____

B _____   _____

C _____   _____

D _____   _____
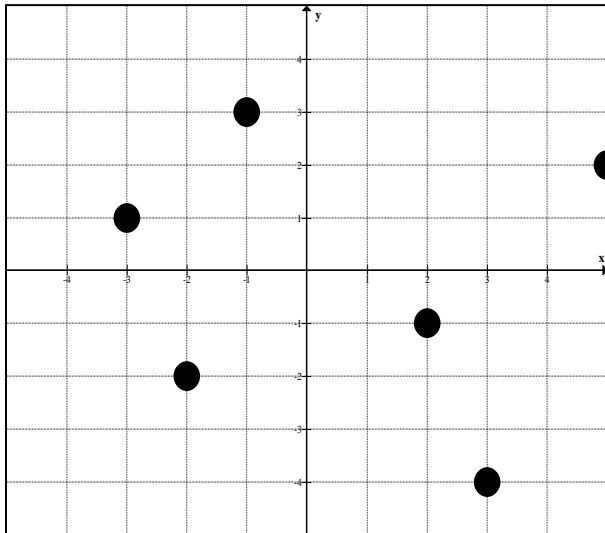
E _____   _____

F _____   _____

Homework
10. Plot a point and label it with the letter in each location indicated.

A Quadrant I
B Quadrant III
C Quadrant IV
D Quadrant II
E Origin
F y – axis
G x - axis

11. Write the coordinates of each point on the graph.

Label the point in quadrant I, **A** _____

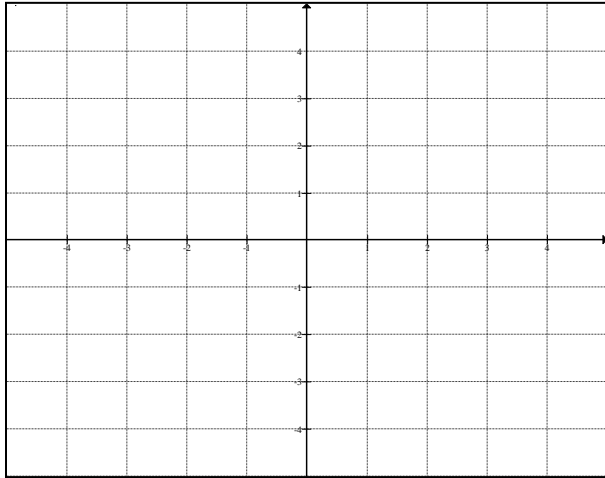Label the points in quadrant IV, **B & C**
_____ _____

Label the points in quadrant II, **E & F**
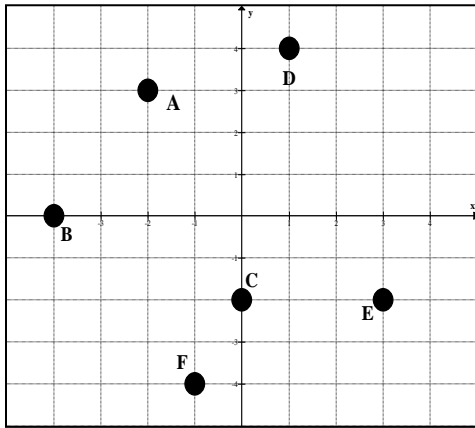_____ _____

Label the point in quadrant III, **D** _____

Label the origin, **O** _____

12. Plot and label the following points:

A (-2, 1.25)   F (0, 1)

B (2, 2)   G (1, 0.5)

C (4, -2 1/2)   H (0, -3)

D (3, -1)   I (-3, 0)

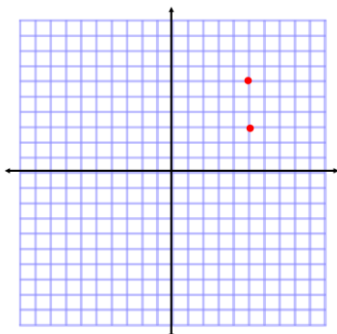E (-5, -2)   J (2, -2)

13. Name the coordinates of each point.

A _____   D _____

B _____   E _____

C _____   F _____

14. Reflect each of the above coordinates (in the previous problem) over the x and y axis. Write the new coordinates below.

Reflect over x   Reflect over y

A _____   _____

B _____   _____

C ____   _____

D _____   _____

E _____   _____

F ____   _____

Cartesian Plane Applications
Classwork

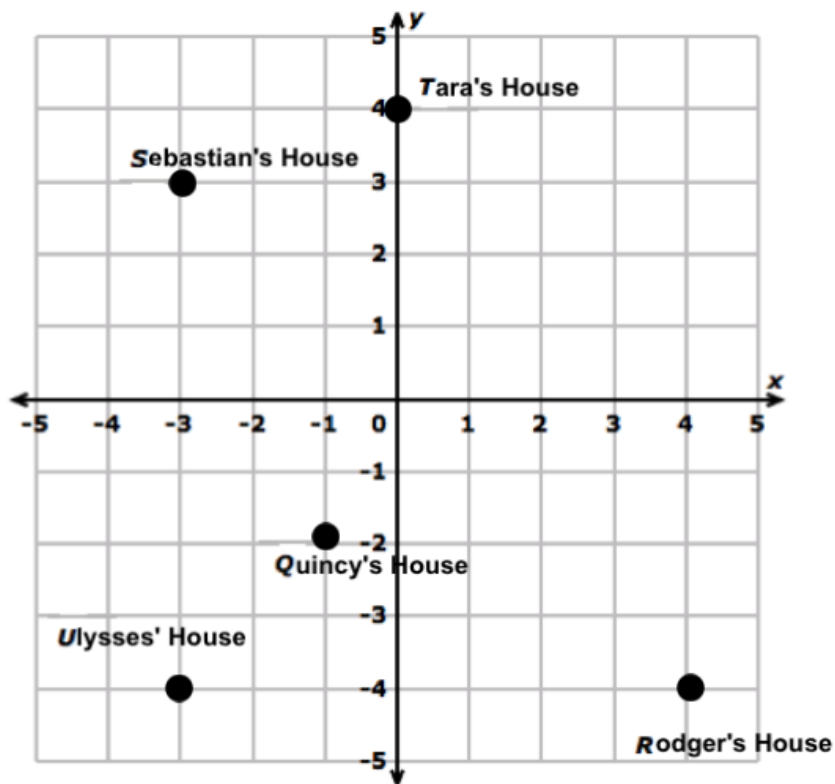What is the distance between the two graphed points?
15.

Find the distance between each pair of points.

16. (20,-10), (20,6)
17. (-3,17), (15 1/4, 17)
18. (5,1), (5,-6.5)
19. (4,6), (4,-3)
20. (6,-3), (6,-7)
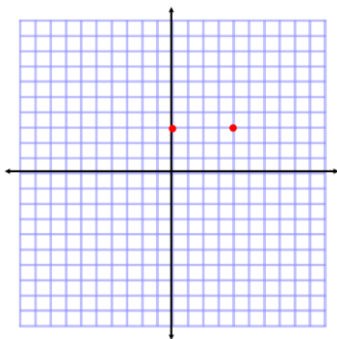
Use the following map to answer questions the next three questions.

21. Each unit on the graph represents ¾ mile. What is the total distance driven, if Sebastian drives from his house, to Ulysses' house and then to Rodger's house?

22. If the town library is at the map origin, describe the trip Tara would have to make to get to the library.

23. What quadrant is Sebastian's house in?

Homework
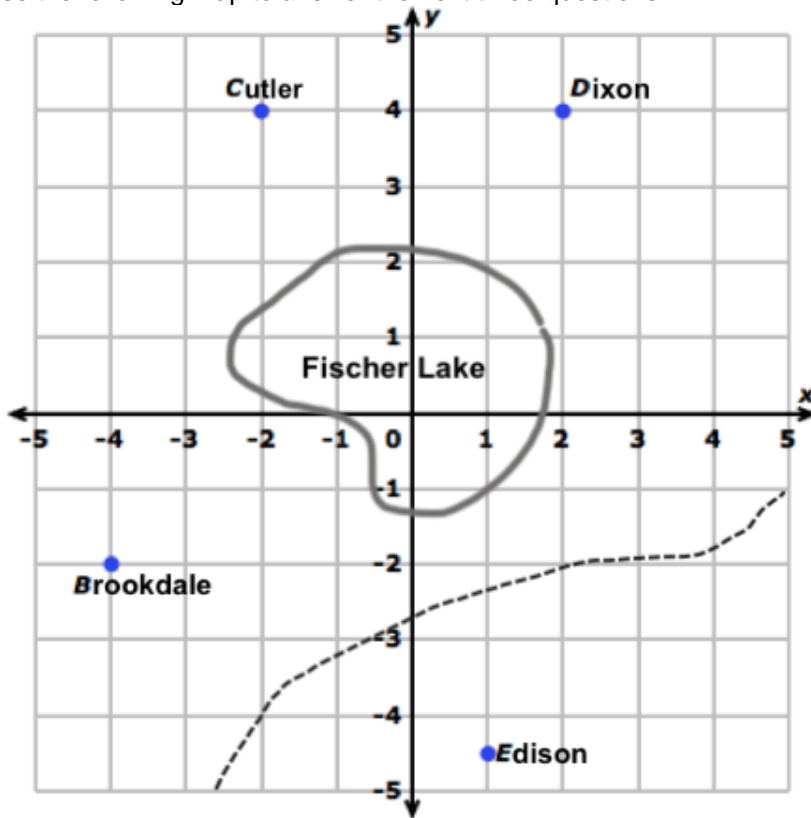
What is the distance between the two graphed points?
24.

Find the distance between each pair of points.

25. (6,2), (0,2)
26. (-3,-1), (-3,0.5)
27. (-2,3), (-2,7)
28. (-7 1/2, 8), (2,8)
29. (6,-2), (-8, -2)

Use the following map to answer the next three questions.

30. If each unit on the graph represents 2/3 mile, what is the distance from Cutler to Dixon?

31. Describe the trip a traveler would have to make to get from Edison to Brookdale.

32. When asked what quadrant Fischer Lake is in, Sammy says it is in Quadrant II. George says that answer is not correct? Who do you agree with? Explain your answer.

Graphing Review Problems

1. A point that lies on the y axis between quadrants I and II could have the following for the x and y-coordinates:
   - a. (0, 5)
   - b. (5, 0)
   - c. (0, -5)
   - d. (-5, 0)

2. A point that lies on the x axis between quadrants I and IV could have the following for the x and y-coordinates:
   - a. (0, 7)
   - b. (7, 0)
   - c. (0, -7)
   - d. (-7, 0)

Use this Cartesian plane to identify the coordinates for each point for #3 - #5
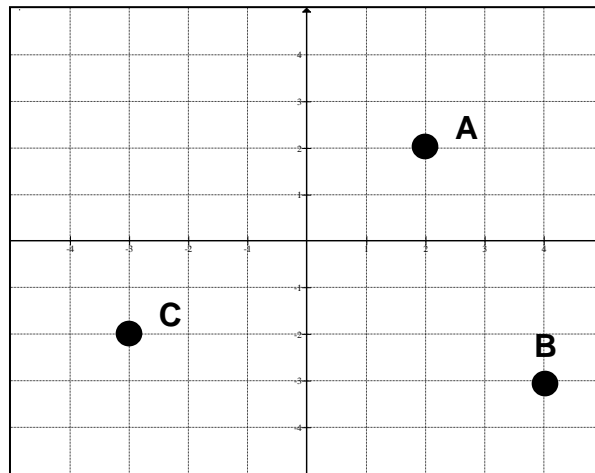
3. Point A
   - a. (-2,2)
   - b. (0,2)
   - c. (2, 2)
   - d. (2,0)

4. Point B
   - a. (4, 3)
   - b. (-4, 3)
   - c. (4, -3)
   - d. (3, 4)

5. Point C
   - a. (3, 2)
   - b. (-3, -2)
   - c. (-3, 2)
   - d. (3, -2)

Find the distance between the two points for #6 - #7

6. (-5, 3.5) (-5, 7)
    a. 4.5 units
    b. 4 units
    c. 3 units
    d. 3.5 units

7. (-7, 5) (-7, -4)
    a. 1 unit
    b. 9 units
    c. 12 units
    d. 3 units

8. Which of the following points would be located in the first quadrant?
    a. (-3, -1)
    b. (3, 1)
    c. (3, -1)
    d. (-3, 1)

9. Which of the following points would be located in the fourth quadrant?
    a. (-4, 5)
    b. (-4, -5)
    c. (4, 5)
    d. (4, -5)

10. A sunken ship is 150 feet below sea level. Which statement is expressed correctly?
    a. 150 feet below sea level can be represented by the integer -150.
    b. The depth of the sunken ship is -150 feet below sea level.
    c. Both A & B

11. The temperature dropped by 10° F when the sun went down. Which statement is expressed correctly?
    a. The integer -10 represents the change in temperature in degrees Fahrenheit.
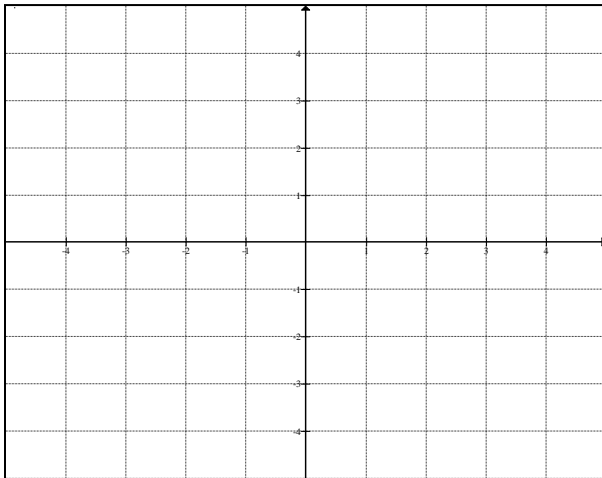   b. The temperature decreased by 10° F.
    c. Both A & B

Number System Short Constructed Response Questions

12. Explain how to plot (-3 ½ , -6) on the coordinate plane.

13. Label the quadrants, x-axis, y-axis, and origin.
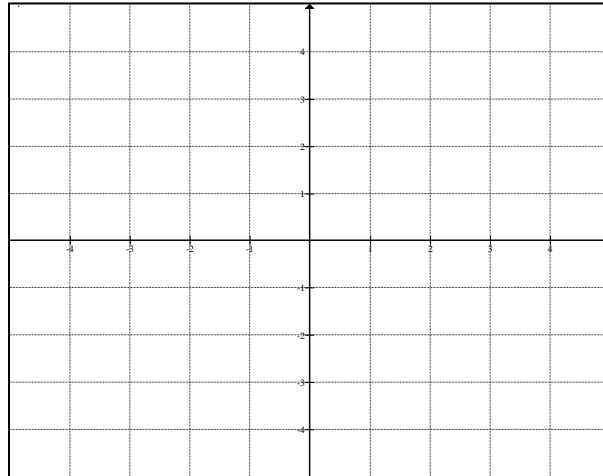
14. Plot the following points on the coordinate grid:
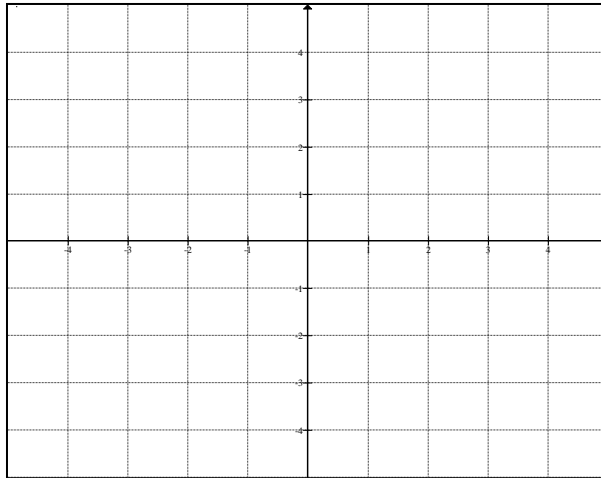

A (0, 4)

B (2 1/4, -3)

C (-4, 0)

D (-2, -3.25)

E (-4, 4)

F (1.5, -2)

15. Each unit on the coordinate grid represents 1 kilometer.
    a. Plot the following cities on the county map: Smithville (-3.5, 2), Horton (4, -1.5), Marina (2, 2), Fair Hills (-3, -1 1/2).
    b. What is the distance in kilometers from Smithville to Marina?
   c. What is the distance in kilometers from Horton to Fair Hills?

16. Below is a map of Lake County. Use the map to answer the following questions.
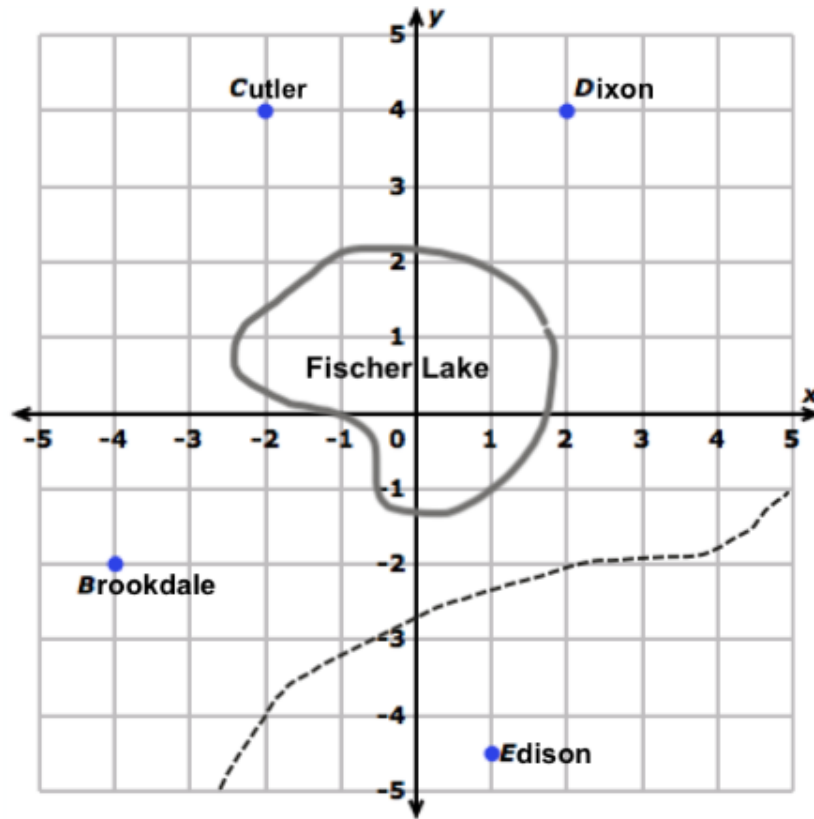
a. If each unit on the graph represents 1/3 mile, what is the distance from Cutler to Dixon?
b. Describe the trip a traveler would have to make to get from Brookdale to Edison.
c. Marcus thinks that the train tracks are in Quadrant IV. Is he correct? Explain your answer.

1.
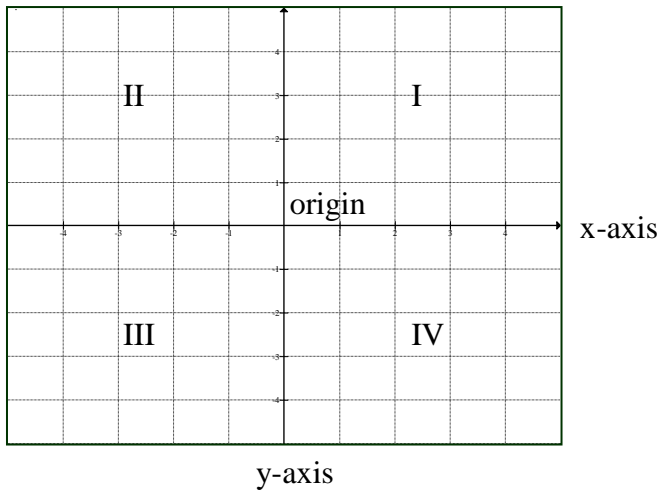
2.

a. III
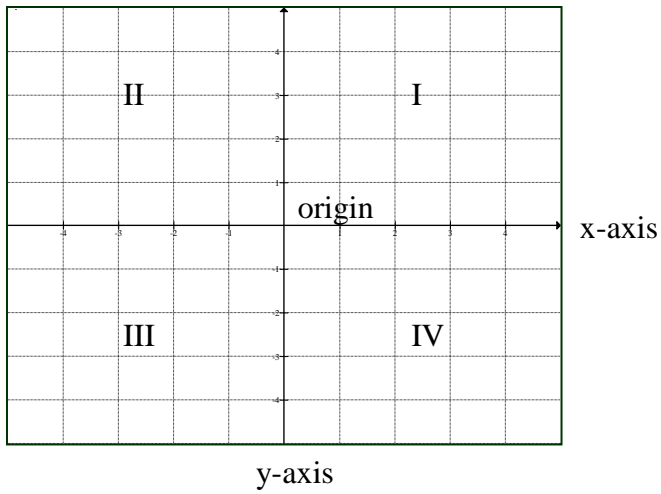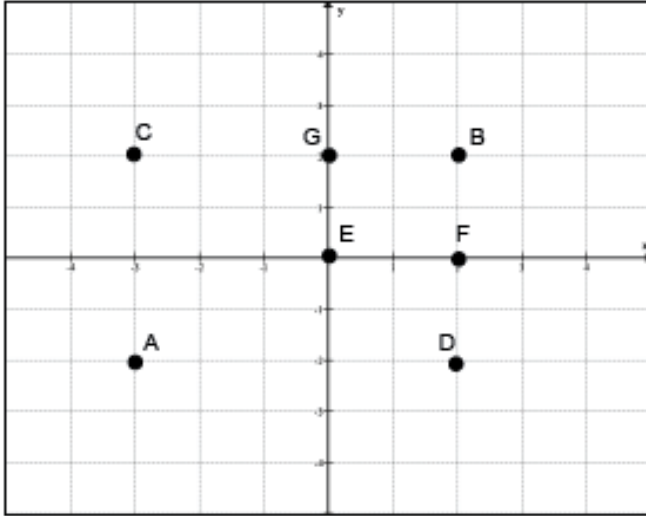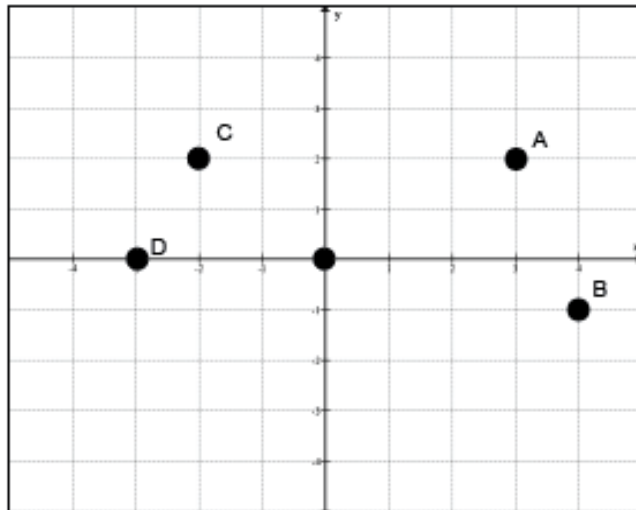b. y-axis
c. II
d. IV
e. I
f. IV

3.

4.

a. I
b. II
c. III
d. III
e. IV
f. IV

5.
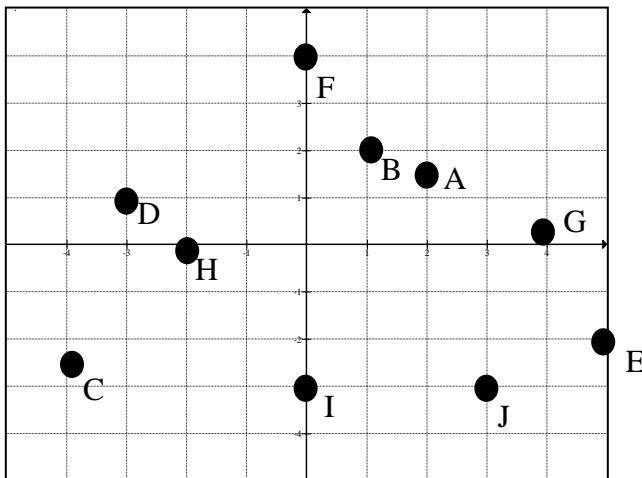

a. A(-3,-2)
b. B(2,2)
c. C(-3,2)
d. D(2,-2)
e. E(0,0)
f. F(2,0)
g. G(0,2)

6.   The origin is not labeled.

7.

8.
    a. (-4, -5)
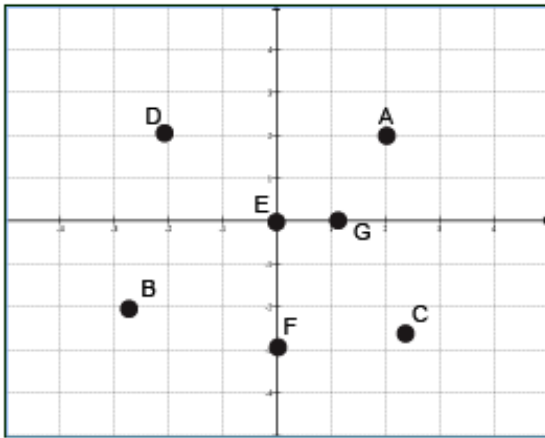   b. (0, 3)
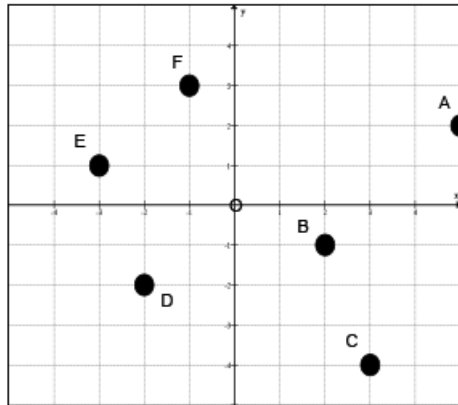   c. (-2, 1)
    d. (1, -2)
    e. (5, 3)
    f.   (5, -4)

9.
    a. (-4, 5)   (4, -5)   (4, 5)
    b. (0, -3)
    c. (-2, -1)   (2, 1)   (2, -1)
    d. (1, 2)   (-1, -2)   (-1, 2)
    e. (5, -3)   (-5, 3)   (-5, -3)
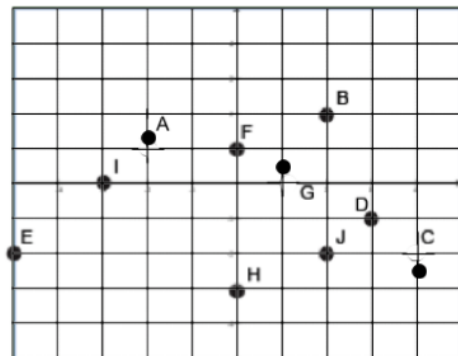   f.   (5, 4)   (-5, -4)   (-5, 4)

10. Answers will vary.

11.

a. A(5,2)
b. B (2, -1)
c. C (3, -4)
d. D(3, -2)
e. E(-3,1)
f. F(-1, 3)
g. O(0,0)

12.

13.
    a.   (-2, 3)
    b. (-4, 0)
    c. (0, -2)
    d. (1, 4)
    e. (3, -2)
    f.   (-1, -4)

14.
    a. (-2, -3)   (2, 3)   (2, -3)
    b. (4, 0)
    c. (0, 2)
    d. (1, -4)   (-1, 4)   (-1, -4)
    e. (3, 2)   (-3, -2)   (-3, 2)
    f.   (-1, 4)   (1, -4)   (1, 4)

15. 3
16. 16
17. 18 ¼
18. 7.5
19. 9
20. 4
21. 10 ½ miles
22. She would have to travel 4 units (or 3 miles) down.
23. Quadrant II
24. 4
25. 6
26. 1.5
27. 4
28. 9 ½
29. 14
30. 2 2/3 miles
31. A traveler would have to travel 3 units (or 2 miles) up and 5 units (or 3 1/3 miles) to the left, in either order.
32. George is correct, because Fischer Lake is in all four quadrants.

Graphing Review Questions

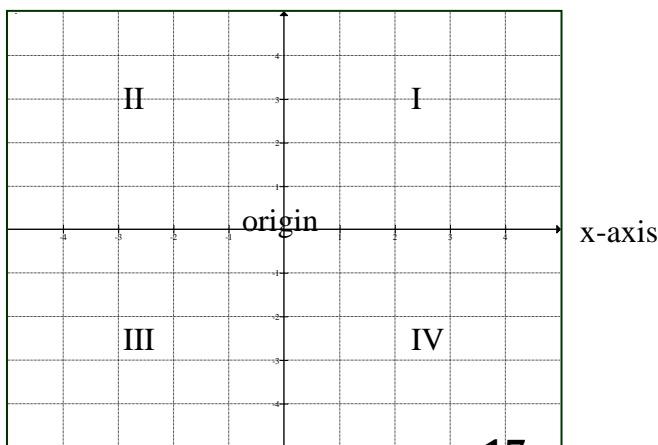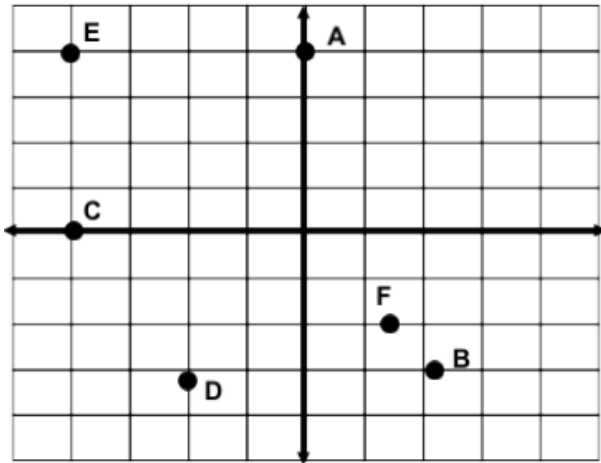|		
1. a	5. b	9. d
2. b	6. d	10. a
3. c	7. b	11. c
4. c	8. b	

12. Start at the origin and go left to -3 ½ on the x axis, then go down 6 from that position.
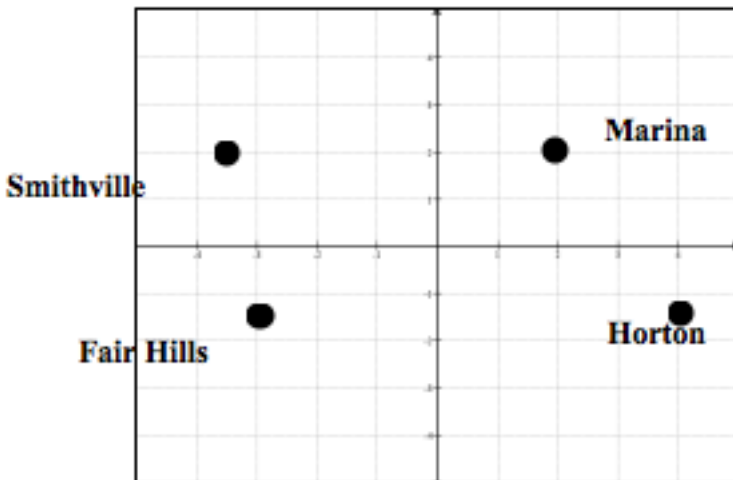
13.

14.

15.

        a.   see grid below.
        b.   5.5 kilometers
        c.   7 kilometers

16.

        d.   1 1/3 miles
        e.   A traveler would have to travel 2 ½ units (or 5/6 of a mile) and 5 units (or 1 2/3 miles) to the right, in either order.
        f.   His answer is not complete. The train tracks are in quadrants III and IV.