

Topic 2

The Four Quadrants

Name _____ Date _____

I. Exploring Symmetry on the Coordinate Plane

A. Indicate the location of each point with x-axis, y-axis, not on an axis, or on both axes.

1. $(8, 28)$

2. $(0, -10)$

3. $(-15, 0)$

4. $(-20, -20)$

5. $(9\frac{5}{8}, 0)$

6. $(18, 0)$

7. $(0, -15)$

8. $(-3.6, 3.6)$

9. $(0, 0)$

10. $(0, 25)$

B. For each point, indicate its location relative to the origin.

1. $(18, 10)$

2. $(-2, 6)$

3. $(24, -13)$

4. $(0, -8.75)$

5. $(-7, -4)$

6. $(-36, 0)$

7. $(5.5, 11)$

8. $(-3\frac{1}{3}, 12\frac{2}{3})$

9. $(-100, -1)$

10. $(0, 0.5)$

C. For each point, indicate in which quadrant it is located, if possible.

1. $(-15, 5)$

2. $(27, 12)$

3. $(0, 9)$

4. $(-21, -19)$

5. $(18, -13)$

6. $(6.85, 0.375)$

7. $(-22, -20)$

8. $(-96, 84)$

9. $(8\frac{13}{25}, -5\frac{7}{20})$

10. $(-40, 0)$

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D. Write the coordinates of the point that is a reflection across the x -axis of each given point.

1. $(-12, -20)$

2. $(-29, 17)$

3. $(4, -\frac{1}{4})$

4. $(27, 11)$

5. $(-15, 11)$

6. $(-19, -6)$

7. $(62.3, -31.9)$

8. $(28, 9)$

9. $(-3, 25)$

10. $(-1.03, -4)$

E. Write the coordinates of the point that is a reflection across the y -axis of each given point.

1. $(-12, -20)$

2. $(-29, 17)$

3. $(4, -\frac{1}{4})$

4. $(27, 11)$

5. $(-15, 11)$

6. $(-19, -6)$

7. $(62.3, -31.9)$

8. $(28, 9)$

9. $(-3, 25)$

10. $(-1.03, -4)$

F. Write the coordinates of the point that is a reflection across both axes of each given point.

1. $(-12, -20)$

2. $(-29, 17)$

3. $(4, -\frac{1}{4})$

4. $(27, 11)$

5. $(-15, 11)$

6. $(-19, -6)$

7. $(62.3, -31.9)$

8. $(28, 9)$

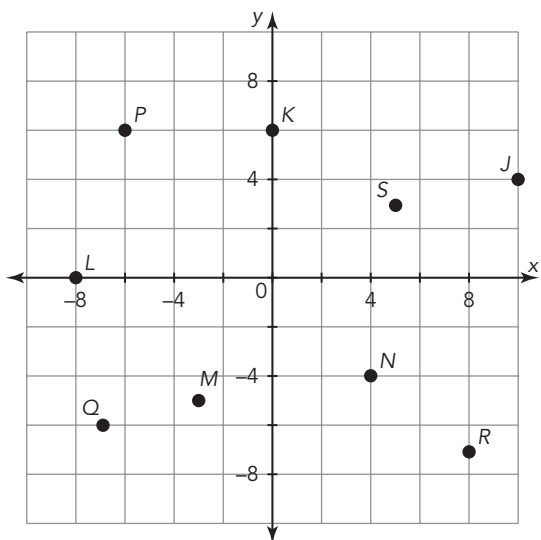
9. $(-3, 25)$

10. $(-1.03, -4)$

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II. Identifying and Interpreting Ordered Pairs

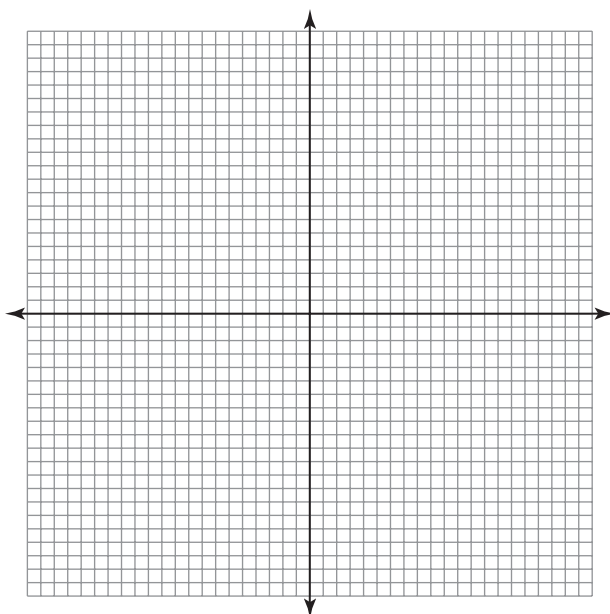
A. Use the coordinate plane shown. Write the coordinates of each point.



1. point K
2. point M
3. point R
4. point L
5. point Q
6. point J
7. point N
8. point P

III. Plotting Points

A. Plot each of the given points on the coordinate plane.



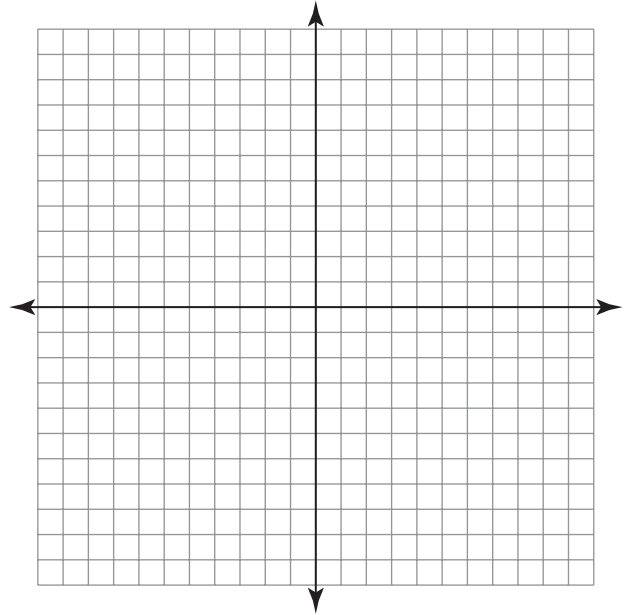
1. $(0, 0)$
2. $(-15, 0)$
3. $(8, 25)$
4. $(-32, -9)$
5. $(28, -22)$
6. $(0, -2)$
7. $(-13, -37)$
8. $(30, 20)$
9. $(-7, 11)$
10. $(34, -6)$
11. $(-21, -28)$
12. $(-27, 40)$

IV. Solving One-Step Equations Using Multiple Representations

A. Complete each graph. Then use the graph to solve the equation.

- Melinda works for "One to Grow On," a greeting card company that makes birthday cards from recycled materials. On the cards, you can make the monkey climb a tree. The height of the monkey in the leaves (or below the leaves) of the tree represents how many years older (or younger) than 10 the person is. The equation $y = x + 10$ describes a person's age in years, y , when the monkey is at a certain level, x .

Level of Monkey	Person's Age (years)
5	15
0	10
-5	5

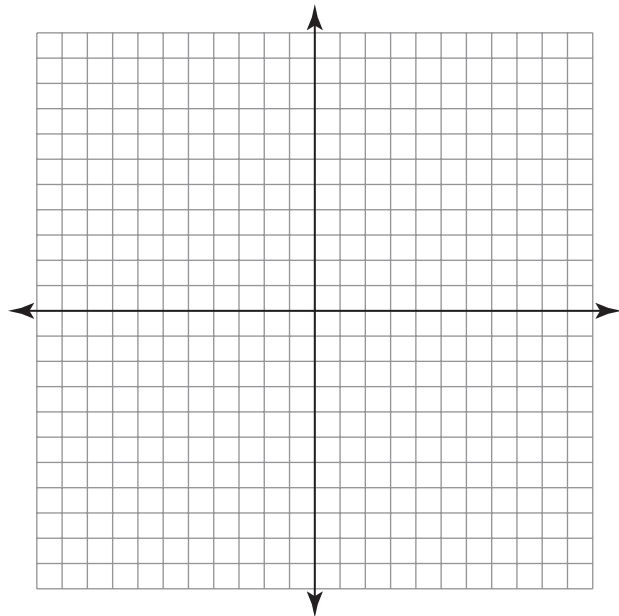


How old is the person if the monkey is 8 levels below the leaves?

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2. Denise is participating in a long-distance bike race to raise money for her favorite charity, and just passed the first flag in the race. Each hour of the race, Denise covers fourteen miles. The equation $y = 14x$ describes Denise's distance from the first flag in miles, y , depending on the number of hours, x , Denise has biked. Consider the time and distance before Denise passed the first flag to be negative values.

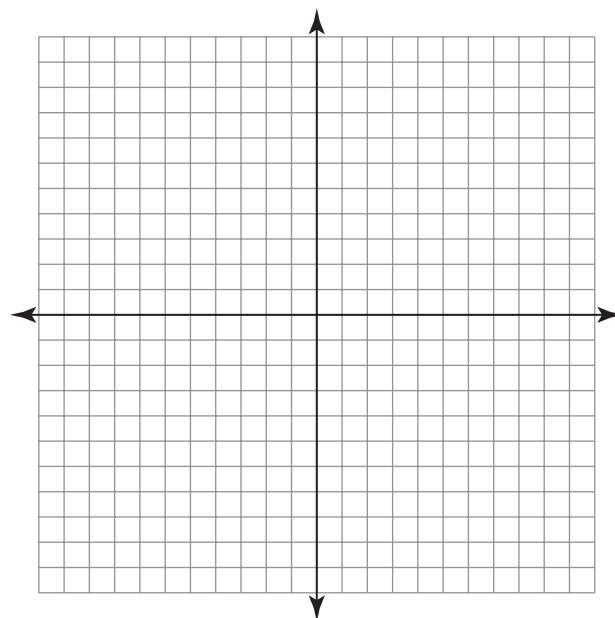
Time (hours)	Distance From First Flag (miles)
2	28
5	70
-1	-14



How far from the first flag was Denise 4 hours ago?

3. Each month, the Blockhouse Creek School Library receives an average of twelve books. The equation $y = 12x$ describes the change in the number of books the library has, y , depending on a certain number of months, x . Consider the number of months before now as a negative amount.

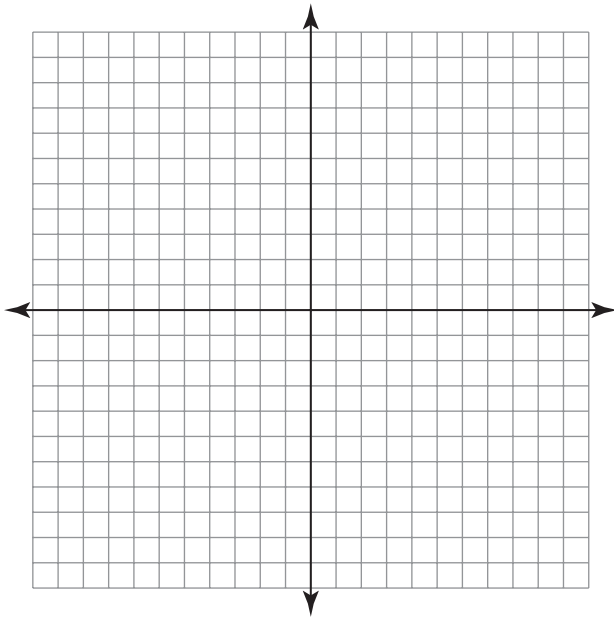
Time (months)	Change in Number of Books
3	36
8	96
-2	-24



When did the library have 48 fewer books than it does now?

4. Jorge has \$400 in his savings account at the beginning of the summer. He got a babysitting job and is dreaming of all the money he will make this summer. His plan is to deposit all of the money he earns into his savings account and not withdraw any. The equation $y = x + 400$ describes Jorge's savings account balance in dollars, y , according to the amount he could make in dollars, x .

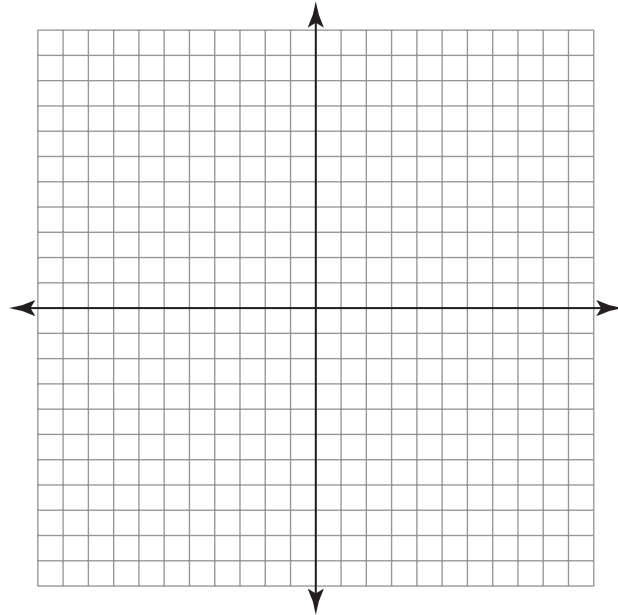
Amount Jorge Could Make	Savings Account Balance
200	600
350	750
500	900



After the summer is over, Jorge actually ends up having \$700 in his account. How much did he earn over the summer?

5. Samantha and her friends are playing putt-putt golf. She laughs because her results did not resemble her real golf game. To figure out the score on a hole, take the value for par, which was 4 strokes for each hole, then add the number of strokes above (or below) par. The equation $y = 4 + x$ describes the score, y , according to the number of strokes above or below par, x .

Strokes Above or Below Par	Score
3	7
8	12
-3	1

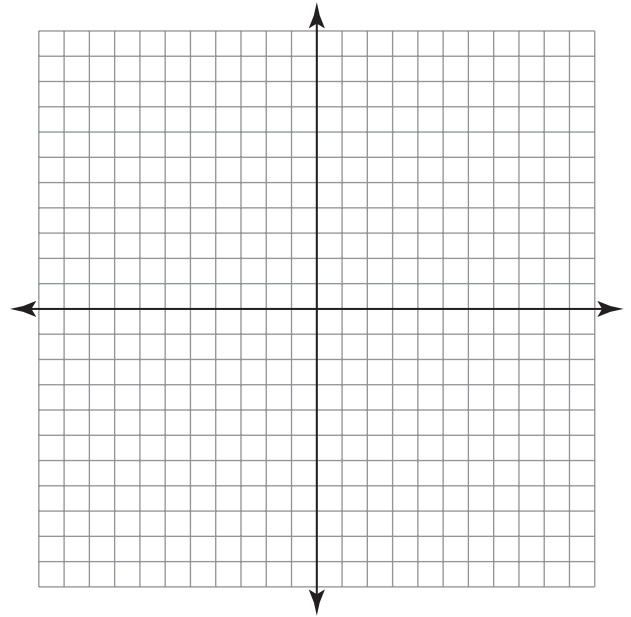


Samantha's score was three on the 18th hole. How many strokes above or below par did she take?

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6. In the US, there are approximately eight babies born every minute. The equation $y = 8x$ describes the number of babies born, y , depending on the number of minutes, x . Consider time in the past and fewer babies to be negative values.

Time (minutes)	Number of Babies Born
7	56
13	104
-5	-40



How many fewer babies were there twelve minutes ago?