

# 6.1 Practice B

Write a positive or negative integer that represents the situation.

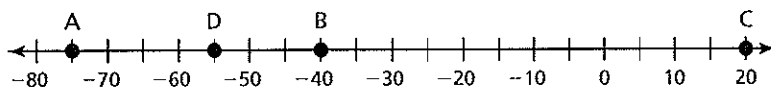
1. You run up 24 steps.
2. The temperature dropped 7 degrees.
3. You give away 2 of your video games.
4. You miss 3 days of practice.

Graph the integer and its opposite.

5.  $-45$
6.  $250$
7.  $-200$
8. You roll a number cube and move ahead 3 spaces. Your friend rolls a number cube and moves the opposite of your move. Graph both moves.

Identify the integer represented by the point on the number line.

9. A
10. B
11. C
12. D



13. Use the information below to write an integer that represents your height on the teeter totter relative to the balance point height.
  - a. You are 8 inches below the balance point height.
  - b. You are 15 inches above the balance point height.
  - c. Your friend is 12 inches above the balance point height. Your height is the opposite.
  - d. You are resting at the balance point height.

Every number has an opposite. Write the opposite of the decimal or fraction. Then graph the number and its opposite.

14.  $8.2$
15.  $-\frac{2}{3}$
16.  $-1\frac{1}{4}$
17. You are riding a roller coaster. During the ride, you climb 25 feet, descend 30 feet, climb 50 feet, and then descend 55 feet. Do you finish *above*, *below*, or at the *same* height as you started? Explain.

# 6.2

## Practice B

Copy and complete the statement using  $<$  or  $>$ .

1.  $-5$  ?  $5$                       2.  $4$  ?  $-2$                       3.  $-1$  ?  $-3$   
 4.  $-6$  ?  $-3$                       5.  $-9$  ?  $-8$                       6.  $-4$  ?  $-1$

Order the integers from least to greatest.

7.  $2, -5, 5, 8, -8$                       8.  $4, -1, -3, -6, 2$   
 9.  $20, -20, 40, 50, -50$                       10.  $10, -15, -20, 25, -30$   
 11. In a round of golf, the lowest score wins. At the end of a round, you have score  $-3$  and your friend has score  $-4$ . Who won the round? Explain.  
 12. Seven integers are ordered from least to greatest. The integer in the middle is zero. Describe the other six numbers.

13. The table shows the highest and lowest daily profit/loss of the five locations of a chain of restaurants.

a. Order the locations by their highest profit/loss from least to greatest.

b. Order the locations by their lowest profit/loss from least to greatest.

Location	Highest Profit/Loss	Lowest Profit/Loss
North	350	125
South	275	-50
East	300	-100
West	50	-250
Central	225	75

c. Find the middle integer of the highest profit/loss.

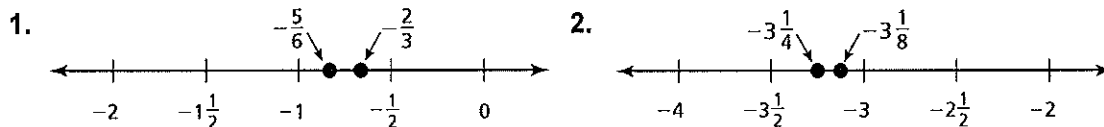
d. Find the middle integer of the lowest profit/loss.

e. The company needs to close one of the locations. Which location should they close? Explain.

14. Point  $A$  is on a number line halfway between  $-20$  and  $-4$ . Point  $B$  is halfway between point  $A$  and  $0$ . What integer is represented by point  $B$ ?  
 15. Nine Celsius temperatures are recorded in a lab. The middle temperature is  $0^\circ\text{C}$ . What is the maximum number of temperatures that could be represented by negative numbers?

## 6.3 Practice B

Find a fraction or mixed number that is between the two numbers.



Copy and complete the statement using  $<$  or  $>$ .

3.  $-\frac{2}{9}$   $\underline{\quad ? \quad}$   $-\frac{1}{3}$

4.  $-1\frac{6}{10}$   $\underline{\quad ? \quad}$   $-1\frac{3}{10}$

5.  $-\frac{2}{5}$   $\underline{\quad ? \quad}$   $-\frac{3}{10}$

6.  $-1\frac{2}{3}$   $\underline{\quad ? \quad}$   $-1\frac{1}{2}$

7.  $-6.3$   $\underline{\quad ? \quad}$   $-4.9$

8.  $-0.11$   $\underline{\quad ? \quad}$   $-0.44$

9.  $-2.05$   $\underline{\quad ? \quad}$   $-2.50$

10.  $-4.9$   $\underline{\quad ? \quad}$   $-4.6$

Order the numbers from least to greatest.

11.  $-\frac{5}{8}, -\frac{3}{4}, -1\frac{1}{8}, -\frac{3}{8}, -1\frac{1}{4}$

12.  $0.7, -0.3, 0, 0.25, -0.37$

13. Two runners slow down. One decelerates at  $-\frac{5}{8}$  ft/sec<sup>2</sup> and the second at  $-\frac{3}{4}$  ft/sec<sup>2</sup>. Which runner slowed down more?

14. In physics, positive speeds denote upward motion and negative speeds denote downward motion. The table gives the speed of a ball thrown upward at a rate of 20.0 meters per second.

Time (seconds)	0	1	2	3	4
Speed (meters/second)	20.0	10.2	0.4	-9.4	-19.2

- When was the speed greatest going upward?
  - When was the speed greatest going downward?
  - Between what two times was the speed zero? What does a speed of 0 mean?
15. A stock lost value on both Monday and Tuesday. On Monday, it changed by  $-5.7$  points, and on Tuesday it changed by  $-3.8$  points. On which day did it drop the least?

## 6.4 Practice B

Find the absolute value.

1.  $|-9|$

2.  $|9.2|$

3.  $\left|-\frac{1}{4}\right|$

4.  $|-10.2|$

5.  $|99|$

6.  $\left|2\frac{1}{7}\right|$

7.  $|15.9|$

8.  $|-125|$

9.  $|200|$

10. Write two integers that have an absolute value of 15.

Copy and complete the statement using  $<$ ,  $>$ , or  $=$ .

11.  $|-11.3| \underline{\quad ? \quad} |16.5|$

12.  $|9| \underline{\quad ? \quad} |-9|$

13.  $\left|-\frac{1}{6}\right| \underline{\quad ? \quad} \left|\frac{1}{2}\right|$

14.  $|-3| \underline{\quad ? \quad} |2|$

15. Two boats lie at the bottom of the ocean. In relation to sea level, the position of Boat A is  $-33$  feet, and the position of Boat B is  $-25$  feet.

- Find the absolute value of each position.
- Which boat is closer to sea level?

Order the values from least to greatest.

16.  $12, |13|, -9, 12, |7|, 0$

17.  $|20|, |18|, 15, |16|, 22, 17$

Simplify the expression.

18.  $-|0|$

19.  $-|4|$

20.  $-|-3|$

21. The word *ROTATOR* is a palindrome.

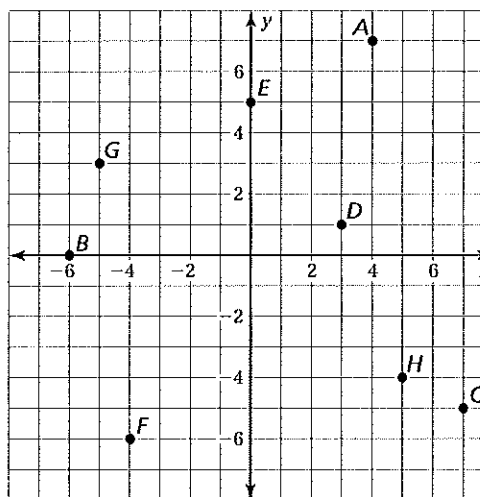
- Graph and label the following points on a number line:  $T = -2$ ,  $A = 0$ ,  $R = -6$ . Then, graph and label the absolute value of each point on the *same* number line.
- Assign a value to point  $O$  so that the letters spell the word *ROTATOR*. Then, graph point  $O$  and the absolute value of point  $O$  on the *same* number line as part (a).

22. Find values of  $x$  and  $y$  so that  $|x| > |y|$  and  $x < y$ .

# 6.5 Practice B

Write an ordered pair corresponding to the point.

- |                   |                   |
|-------------------|-------------------|
| 1. Point <i>A</i> | 2. Point <i>B</i> |
| 3. Point <i>C</i> | 4. Point <i>D</i> |
| 5. Point <i>E</i> | 6. Point <i>F</i> |
| 7. Point <i>G</i> | 8. Point <i>H</i> |



Plot the ordered pair in a coordinate plane. Describe the location of the point.

- |                  |  |
|------------------|--|
| 9. $W(-3, 2)$    | 10. $X\left(\frac{1}{2}, -3\frac{1}{2}\right)$ |
| 11. $Y(0, -3.5)$ | 12. $Z(-1, 4)$                                 |

Tell whether the statement is *sometimes*, *always*, or *never* true.

- The *y*-coordinate of points in Quadrant IV are positive.
- A point with an *x*-coordinate of zero and a positive *y*-coordinate lies on the *y*-axis between Quadrants III and IV.
- Two points, one with a positive *y*-coordinate and another with a negative *x*-coordinate, both lie in Quadrant II.
- The points  $P(2, 1)$ ,  $Q(2, -3)$ ,  $R(-1, -3)$ , and  $S(-1, 1)$  are vertices of a figure.

a. Draw the figure in a coordinate plane.

- Find the perimeter of the figure.
- Find the area of the figure.

- A movie theater is located at  $(1, 7)$ .
  - To get from your house to the movie theater, you walk 4 blocks east and 5 blocks north. What ordered pair corresponds to the location of your house?
  - After walking 6 blocks to the movie theater as described in part (a), you meet your friend at your friend's house. What ordered pair corresponds to the location of your friend's house?
  - How far do you and your friend walk to get to the movie theater?
  - There are two ice cream parlors, one located at  $(0, 6)$  and another located at  $(-1, 5)$ . After a movie and ice cream, you will each walk home alone. Which location is most advantageous to both you and your friend?

**Extension**  
**6.5 Practice**

Reflect the point (a) in the  $x$ -axis, and (b) in the  $y$ -axis.

- |                                   |                  |  |
|-----------------------------------|------------------|--|
| 1. $(3, 2)$                       | 2. $(5, -2)$     | 3. $(-3, 4)$                                 |
| 4. $(-1, -4)$                     | 5. $(3, 0)$      | 6. $(0, -6)$                                 |
| 7. $\left(2\frac{1}{2}, 4\right)$ | 8. $(-2.5, 3.5)$ | 9. $\left(-\frac{1}{2}, 4\frac{1}{2}\right)$ |

Reflect the point in the  $x$ -axis followed by the  $y$ -axis.

- |                 |                |                                    |
|-----------------|----------------|------------------------------------|
| 10. $(5, 3)$    | 11. $(3, -1)$  | 12. $\left(5, 4\frac{1}{2}\right)$ |
| 13. $(-1.5, 4)$ | 14. $(-6, -2)$ | 15. $(3.5, 8.5)$                   |

16. A point is reflected in the  $x$ -axis. The reflected point is  $(2, 1)$ .

- What is the original point?
- What is the distance between the points?

17. A point is reflected in the  $y$ -axis. The reflected point is  $(-3, 2.5)$ .

- What is the original point?

~~b. What is the distance between the points?~~

18. A point is reflected in the  $x$ -axis followed by the  $y$ -axis. The reflected point is  $(-3, -4)$ . What is the original point?

19. The vertices of a parallelogram are  $(0, 0)$ ,  $(5, 0)$ ,  $(8, 2)$ , and  $(3, 2)$ .

- The parallelogram is reflected in the  $x$ -axis. Give the coordinates of the reflected parallelogram.
- The original parallelogram is reflected in the  $y$ -axis. Give the coordinates of the reflected parallelogram.