

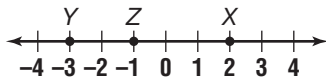
# Graphing Integers on a Number Line

(Pages 52–57)

**Integers** are the **negative numbers**  $\{-1, -2, -3, -4, \dots\}$  and whole numbers  $\{0, 1, 2, 3, 4, \dots\}$ . To **graph** a set of integers on a **number line**, locate the points named by those numbers and place a dot on the number line. The number that corresponds to a point on a number line is called the **coordinate** of that point. The **absolute value** of a number is its distance from zero on a number line, and is denoted by vertical bars on either side of the number. For example,  $|-3| = 3$  and  $|3| = 3$ .

## EXAMPLES

**A** Name the coordinates of  $X$ ,  $Y$ , and  $Z$ .



The coordinate of  $X$  is 2,  $Y$  is  $-3$ , and  $Z$  is  $-1$ . The graph shows the set of integers  $\{-3, -1, 2\}$ .

**B** Evaluate  $|-6| - |4|$ .

$$|-6| - |4| = 6 - 4 \quad |-6| = 6, |4| = 4 \\ = 2$$

## PRACTICE

Name the coordinate of each point.

1.  $A$
2.  $B$
3.  $C$
4.  $D$
5.  $E$
6.  $F$



Graph each set of numbers on a number line.

7.  $\{-3, 5, -1\}$
8.  $\{-4, 2, -5\}$
9.  $\{3, -2, 4\}$
10.  $\{0, -5, -3\}$
11.  $\{-5, -4, -3, -2\}$
12.  $\{-2, -1, 0, 1\}$

Replace each  $\bullet$  with  $<$  or  $>$  to make a true sentence.

13.  $8 \bullet -6$
14.  $0 \bullet -3$
15.  $-2 \bullet -1$
16.  $-5 \bullet 5$
17.  $-4 \bullet -7$
18.  $8 \bullet -9$

Evaluate each expression.

19.  $|-3| + |-3|$
20.  $|-5| - |1|$
21.  $|-7| + |-6|$
22.  $|-9| - |-2|$
23.  $|4| + |-5|$
24.  $|-8| - |-2|$



**25. Standardized Test Practice** Choose the set of numbers that is correctly ordered from least to greatest.

- A**  $\{-1, -4, -5, -7\}$     **B**  $\{-6, -1, 0, 4\}$     **C**  $\{-1, -2, 0, 1\}$     **D**  $\{5, -4, -3, -1\}$

Answers: 1. 1 2. -4 3. 5 4. 4 5. -1 6. -2 7. -12. See Answer Key. 13. < 14. < 15. < 16. < 17. < 18. < 19. 6 20. 4 21. 13 22. 7 23. 9 24. 6 25. B