CLASSWORK/HOMEWORK Integers & Absolute Value

Example 2 (page 17)

Find each absolute value.

9. $|2|$ **10.** $|-3|$ **11.** $|-8|$ **12.** $|12|$

13. $|-52|$ **14.** $|26|$ **15.** $|0|$ **16.** $|-200|$

Example 3 (page 17)

Evaluate each expression for the given value.

17. $|m|$ for $m = -12$ **18.** $8|w|$ for $w = -6$ **19.** $|7r|$ for $r = 13$

20. $4|s|$ for $s = -5$ **21.** $5 + |t|$ for $t = -8$ **22.** $|3z|$ for $z = 62$

23. $|4d|$ for $d = 71$ **24.** $32 + |b|$ for $b = -9$ **25.** $10|a|$ for $a = -7$

Example 4 (page 18)

Order the integers in each set from least to greatest.

26. $-9, 5, 2, -8, 0, 10, -12$ **27.** $-13, -16, 11, -6, 7, 2, -4$

28. $7, 3, -15, -7, 13, -1, 1$ **29.** $-21, 22, -17, 5, 28, -31$

30. $-9, -2, -12, -6, -15, -1, -10$ **31.** $-33, 33, -19, 19, 27, -27$

Example 5 (page 18)

32. Chemistry Order the elements in the table from the least to greatest boiling point.

33. Golf In golf, the lowest score wins. One golfer finishes a course at -9. A second golfer finishes at -12.

a. Which golfer wins?

b. By how much does the winner beat the other golfer?

Boiling Point (at sea level)

Element	°F
Chlorine	–29
Helium	–452
Iodine	364
Neon	–411
Nitrogen	–320
Oxygen	–297
Radon	–79

SOURCE: *CRC Handbook of Chemistry and Physics*

B Apply Your Skills

Find each absolute value. Simplify if needed.

34. $|-1.5|$ **35.** $|4 + 6|$

36. $|-7| + |2|$ **37.** $|18 - 9|$

Need Help?
Simplify each side before you compare.

Compare. Write <, >, or =.

38. $-12 \blacksquare 12$ **39.** $3 \blacksquare -4$ **40.** $-6 \blacksquare -8$

41. $|-12| \blacksquare |12|$ **42.** $|3| \blacksquare |-4|$ **43.** $|-6| \blacksquare |-8|$

44. $-3 \blacksquare |-6|$ **45.** $|-25| \blacksquare -1$ **46.** $|1| \blacksquare |-1|$

47. Writing in Math Suppose a and b are integers, and $|a| > |b|$. Must a be greater than b? Use examples to support your answer.

Write an integer to represent each situation.

48. a gain of 3 points **49.** a \$65 withdrawal

50. a loss of 7 pounds **51.** 200 ft above sea level

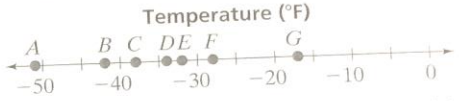
52. Reasoning Do decimals have opposites? Explain.

Need Help?
Remember to simplify within absolute value symbols first.

Evaluate each expression for $a = 7$, $b = -2$, and $c = -5$.

53. $6|4a|$
54. $5|c| - 3|b|$
55. $4|b| + 9|a|$
56. $|a| \cdot |c|$
57. $5|c|$
58. $12|c| + 2|a|$
59. $3|a|$
60. $6|a| + 1|a|$

Weather **Write the letter for the point on the number line that describes each record low temperature.**



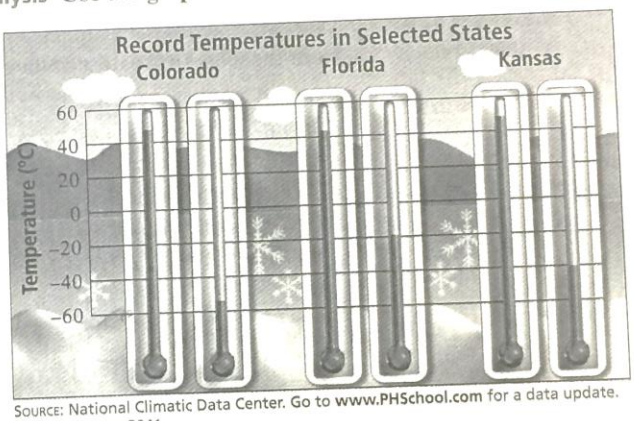
61. Coventry, Connecticut
January 22, 1961: −32°F

62. Vanderbilt, Michigan
February 9, 1934: −51°F

63. Mt. Mitchell, North Carolina
January 21, 1985: −34°F

64. Smethport, Pennsylvania
January 5, 1904: −42°F

Data Analysis **Use the graph to answer Exercises 65–67.**



SOURCE: National Climatic Data Center. Go to www.PHSchool.com for a data update. Web Code: acg-2041

65. Which state had the coldest temperature?

66. The lowest temperature ever recorded in Illinois is −38°C. Was it ever that cold in Kansas? Explain.

67. Which state had a temperature of 48°C below zero at one time?

Evaluate each expression for $m = 5.2$, $n = -4.5$, and $r = -3.8$.

68. $|3m| + |n|$
69. $5|r| + |m|$
70. $6|n| - 3|r|$

Challenge

Order the numbers in each set from least to greatest.

71. $-9.9, -10, -9.18, -9.8$
72. $-4.5, 0.25, -3.45, 2.85, 1.95$
73. $-1.33, -1.3, -1.28, -1.2$
74. $-0.5, 0.33, -0.75, 0.4, -0.6$

75. **Stretch Your Thinking** Becky multiplies a number by 8, adds 10, and then divides by 5. If the result is 26, what is her number?