Name _____ Date _____ Class _____

LESSON Problem Solving
11-1 Integers in Real-World Situations

Write the correct answer.

1. The element mercury is used in thermometers because it expands as it is heated. Mercury melts at 38°F below zero. Write this temperature as an integer.

_____

2. Denver, Colorado, earned the nickname "Mile High City" because of its elevation of 5,280 feet above sea level. Write Denver's elevation as an integer in feet and miles.

_____

3. The lowest temperature recorded in San Francisco was 20°F. Buffalo's lowest recorded temperature was the opposite of San Francisco's. What was Buffalo's record temperature?

_____

4. Greenland holds the record for the lowest temperature recorded on Earth. That temperature in degrees Fahrenheit is 65 degrees below zero. What is Earth's lowest recorded temperature written as an integer?

_____

5. In 1960, explorers on the submarine *Trieste 2* set the world record for the deepest dive. The ship reached 35,814 feet below sea level. Write this depth as an integer.

_____

6. In 1960, Joseph W. Kittinger, Jr., set the record for the highest parachute jump. He jumped from an air balloon at 102,800 feet above sea level. Write this altitude as an integer.
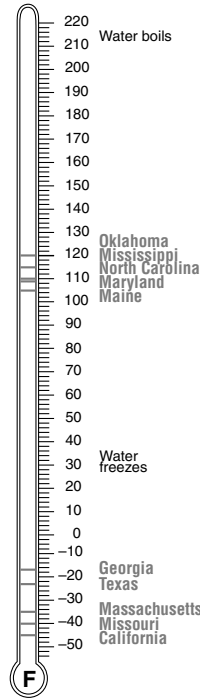
_____

Circle the letter of the correct answer.

7. Which situation cannot be represented by the integer −10?

A an elevation of 10 feet below sea level

B a temperature increase of 10°F

C a golf score of 10 under par

D a bank withdrawal of $10

8. Paper was invented in China one thousand, nine hundred years ago. Which integer represents this date?

F 1,900

G 900

H −1,900

J −1,000

9. The elevation of the Dead Sea is about 1,310 feet below sea level. Which integer represents this elevation?

A −1,310

B −131

C 131

D 1,310

10. The quarterback had a 10-yard loss and then a 25-yard gain. Which integer represents a 25-yard gain?

F −25

G −10

H 25

J 10

8

Holt Mathematics

Draw a line on the thermometer to show each given temperature record.
Then label each state's name at its correct line on the thermometer.

1. The lowest temperature in California was recorded on January 20, 1937. It was −45°F.

2. The highest temperature in North Carolina was recorded on August 21, 1983. It was 110°F.

3. The lowest temperature in Georgia was recorded on January 27, 1940. It was −17°F.

4. The highest temperature in Maine was recorded on July 10, 1911. It was 105°F.

5. The lowest temperature in Missouri was recorded on February 13, 1905. It was −40°F.

6. The lowest temperature in Texas was recorded on February 8, 1933. It was −23°F.

7. The highest temperature in Maryland was recorded on July 10, 1936. It was 109°F.

8. The lowest temperature in Massachusetts was recorded on January 12, 1981. It was −35°F.

9. The highest temperature in Oklahoma was recorded on June 27, 1994. It was 120°F.

10. The highest temperature in Mississippi was recorded on July 29, 1930. It was 115°F.

Thermometer labels:
220
210 — Water boils
200
190
180
170
160
150
140
130
120 — Oklahoma / Mississippi
110 — North Carolina / Maryland
100 — Maine
90
80
70
60
50
40
30 — Water freezes
20
10
0
−10
−20 — Georgia / Texas
−30
−40 — Massachusetts / Missouri / California
−50

°F

7 **Holt Mathematics**

Write the correct answer.

1. The element mercury is used in thermometers because it expands as it is heated. Mercury melts at 38°F below zero. Write this temperature as an integer.

   −38°F

2. Denver, Colorado, earned the nickname "Mile High City" because of its elevation of 5,280 feet above sea level. Write Denver's elevation as an integer in feet and miles.

   +5,280 feet or +1 mile

3. The lowest temperature recorded in San Francisco was 20°F. Buffalo's lowest recorded temperature was the opposite of San Francisco's. What was Buffalo's record temperature?

   −20°F

4. Greenland holds the record for the lowest temperature recorded on Earth. That temperature in degrees Fahrenheit is 65 degrees below zero. What is Earth's lowest recorded temperature written as an integer?

   −65°F

5. In 1960, explorers on the submarine *Trieste 2* set the world record for the deepest dive. The ship reached 35,814 feet below sea level. Write this depth as an integer.

   −35,814 feet

6. In 1960, Joseph W. Kittinger, Jr., set the record for the highest parachute jump. He jumped from an air balloon at 102,800 feet above sea level. Write this altitude as an integer.

   +102,800 feet

Circle the letter of the correct answer.

7. Which situation cannot be represented by the integer −10?
   A an elevation of 10 feet below sea level
   B a temperature increase of 10°F
   C a golf score of 10 under par
   D a bank withdrawal of $10

8. Paper was invented in China one thousand, nine hundred years ago. Which integer represents this date?
   F 1,900
   G 900
   H −1,900
   J −1,000

9. The elevation of the Dead Sea is about 1,310 feet below sea level. Which integer represents this elevation?
   A −1,310
   B −131
   C 131
   D 1,310

10. The quarterback had a 10-yard loss and then a 25-yard gain. Which integer represents a 25-yard gain?
   F −25
   G −10
   H 25
   J 10

8 **Holt Mathematics**

We get information from the numbers we read.

A **positive number** is greater than zero. The plus sign (+) denotes a positive number. If no sign is shown, the number is positive.
• Our car travels 55 miles per hour. → 55 or +55
• The temperature climbed to 90°. → 90 or +90

Write the positive number for each of the following situations.

1. Alicia put $25 in her savings account.

   25 or +25

2. Oklahoma City is 1,195 feet above sea level.

   1,195 or +1,195

3. Our football team gained 12 yards on the last play.

   12 or +12

A **negative number** is less than zero. A negative sign (−) is always used to denote a negative number.
• Death Valley is 282 feet below sea level. → −282
• The temperature dipped to 12° below zero. → −12

Write the negative number for each of the following situations.

4. Dave withdrew $50 from his savings account.

   −50

5. The coldest temperature recorded in Antarctica was 127° below zero.

   −127

6. Oarfish live at 3,000 feet below sea level.

   −3,000

9 **Holt Mathematics**

I am one of the numbers in the box below. Use the clues to eliminate numbers that are not me. What number is left?

You must use the clues *in order*.

−13.4	7	38	$19\frac{1}{2}$
	−42	1	4.2
−23	90	$\frac{15}{6}$	−7
	−90	42	

1. I am an integer, so cross out any number that is not an integer.

   Cross out −13.4, $19\frac{1}{2}$, 4.2, $\frac{15}{6}$

2. My opposite and I are both in the box, so cross out any number that does not have an opposite in the box.

   Cross out 38, 1, −23

3. I could be a recorded temperature on Earth, so cross out any number that is too low or too high.

   Cross out −90

4. Now cross out the opposite of #3.

   Cross out 90

5. If I were a temperature, I would be the lowest temperature not yet crossed out.

   Cross out −42

6. Now cross out all remaining positive numbers.

   Cross out 7 and 42

What number am I?   −7

10 **Holt Mathematics**