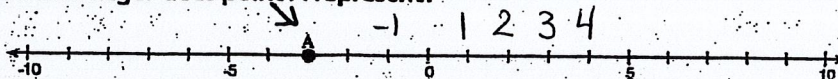


Practice 8-1

Integers and the Number Line

1. a) What integer does point A represent? _____



- b) What is the opposite of the integer represented by point A? _____

2. Find the opposite of -9. _____

3. Determine which integers correspond to the situations.

- a) On Wednesday, the temperature was 25° above zero. +25 or -25

- b) On Thursday, it was 7° below zero. +7 or -7

4. Which situation can the integer -10 represent?

- ☐ A. spending 10 dollars ☐ C. gaining 10 yards
☐ B. walking up 10 stairs ☐ D. earning 10 dollars

5. A point on the side of a mountain is 7,039 m above sea level. Express this elevation as an integer. _____

6. Which situation can the integer 11 represent? (positive 11)

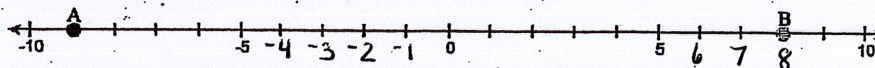
- ☐ A. A fish swims 11 ft below sea level.
☐ B. A bird flies 11 ft above sea level.
☐ C. You scuba dive 11 ft below sea level.

7. a) Writing What is the opposite of 73? _____

- b) What is the reciprocal of 73? _____

- c) Describe any similarities and differences between the opposite of a non-zero number and the reciprocal of that number.

8. Error Analysis Your friend incorrectly says that point A and point B represent opposite integers.



- a) What is the opposite of the integer represented by point A? _____

- b) What is the opposite of the integer represented by point B? _____

- c) Why is your friend incorrect?

- ☐ A. The distance from 0 to A is greater than the distance from 0 to B.
☐ B. The distance from 0 to A is less than the distance from 0 to B.
☒ C. A and B are not on opposite sides of 0.
☒ D. A and B are not the same point.

reciprocal
means to
"flip"

$$\frac{3}{1} \rightarrow \frac{1}{3}$$

A or B

check
2

9. Open-Ended Which situation(s) could be represented by -104 ? Check all that apply.

- ☐ A. skiing 104 ft down a mountain
- ☐ B. a bird flying 104 ft above the ground
- ☐ C. spending \$104 on vacation
- ☐ D. earning \$104 at your summer job

10. Reasoning Two people are scuba diving. One diver is 36 ft below the surface. The other is 44 ft below the surface.

- a) What integers represent where the divers are with respect to the surface?
- b) Which diver is deeper?

11. Air Travel An airplane traveling at an altitude of 6,400 m changes its altitude by 1,400 m. Which situation describes the change in altitude?

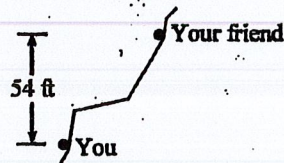
- ☐ A. The altitude is 1,400 m higher after the change.
- ☐ B. The altitude is 1,400 m lower after the change.
- ☐ C. The altitude is 6,400 m higher after the change.
- ☐ D. The altitude is 6,400 m lower after the change.

12. A meteorologist forecasts the temperature to be 6°C below zero. The integer -6 represents this situation.

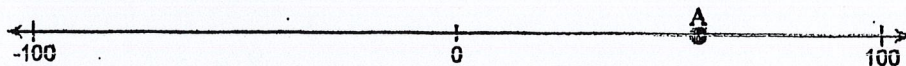
- a) Find the opposite of this integer.
- b) Which of the following represents the opposite of the situation?
- ☒ A. The meteorologist forecasts the temperature to be 5°C degrees above zero.
- ☐ B. The meteorologist forecasts the temperature to be 6°C degrees below zero.
- ☒ C. The meteorologist forecasts the temperature to be 7°C degrees below zero.
- ☐ D. The meteorologist forecasts the temperature to be 6°C degrees above zero.

B or C

13. Multiple Representations You and a friend are hiking up a mountain. At one point your friend is 54 ft higher up than you are. What integer represents your elevation relative to your friend's? Your friend's elevation relative to yours?



14. Think About the Process You are given a number line with labels for -100 , 0 , 100 , and a point plotted for an integer A. How can you plot the point for the opposite of the integer A?



- ☒ A. Draw any point to the right of 0 on the number line.
- ☐ B. Draw any point to the left of 0 on the number line.
- ☐ C. Draw a point to the left of 0 on the number line at the same distance from 0 as A is to the right.
- ☒ D. It is not possible to plot the opposite of point A.

B or C

15. Think About the Process A contestant in a game show has 9,000 points. The contestant answers the next question incorrectly and loses 750 points.

- a) Does the word "lose" suggest a positive integer or a negative integer?
- ☐ A. A negative integer
- ☐ B. A positive integer
- b) What integer represents a loss of 750 points?