
Lesson 1 Practice Problems

Problem 1

- a. Is a temperature of -11 degrees warmer or colder than a temperature of -15 degrees?
- b. Is an elevation of -10 feet closer or farther from the surface of the ocean than an elevation of -8 feet?
- c. It was 8 degrees at nightfall. The temperature dropped 10 degrees by midnight. What was the temperature at midnight?
- d. A diver is 25 feet below sea level. After he swims up 15 feet toward the surface, what is his elevation?

Possible Solutions

- a. Warmer
- b. Farther
- c. -2 degrees
- d. -10 feet or 10 feet below sea level

Problem 2

- a. A whale is at the surface of the ocean to breathe. What is the whale's elevation?
- b. The whale swims down 300 feet to feed. What is the whale's elevation now?
- c. The whale swims down 150 more feet more. What is the whale's elevation now?
- d. Plot each of the three elevations as a point on a vertical number line. Label each point with its numeric value.

Possible Solutions

- a. 0 . (Sea level is 0 feet above or below sea level.)
- b. -300 feet. (The whale is 300 feet *below* sea level.)
- c. -450 feet. (The whale was 300 feet *below* sea level, and now it is an additional 150 feet below sea level.)
- d. A number line with 0 , -300 , and -450 marked.

Problem 3

From Grade 6, Unit 6, Lesson 5

Explain how to calculate a number that is equal to $\frac{2.1}{1.5}$.

Possible Solutions

Answers vary. Sample response: $\frac{2.1}{1.5}$ means $2.1 \div 1.5$. This can be done by long division. (The question doesn't require it, but the quotient is 1.4.)

Problem 4

From Grade 6, Unit 6, Lesson 4

Write an equation to represent each situation and then solve the equation.

- Andre drinks 15 ounces of water, which is $\frac{3}{5}$ of a bottle. How much does the bottle hold? Use x for the number of ounces of water the bottle holds.
- A bottle holds 15 ounces of water. Jada drank 8.5 ounces of water. How many ounces of water are left in the bottle? Use y for the number of ounces of water left in the bottle.
- A bottle holds z ounces of water. A second bottle holds 16 ounces, which is $\frac{8}{5}$ times as much water. How much does the first bottle hold?

Possible Solutions

- $\frac{3}{5}x = 15$. Solution: 25.
- $y + 8.5 = 15$. Solution: 6.5.
- $\frac{8}{5}z = 16$ Solution: 10. Equations equivalent to these are also acceptable.

Problem 5

From Grade 6, Unit 4, Lesson 13

A rectangle has an area of 24 square units and a side length of $2\frac{3}{4}$ units. Find the other side length of the rectangle. Show your reasoning.

Possible Solutions

$8\frac{8}{11}$. Sample reasoning: $24 \div \frac{11}{4} = 24 \cdot \frac{4}{11} = \frac{96}{11} = 8\frac{8}{11}$.

Lesson 2 Practice Problems

Problem 1

For each number, name its opposite.

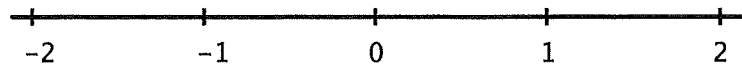
- | | |
|----------|-----------|
| a. -5 | d. 0.875 |
| b. 28 | e. 0 |
| c. -10.4 | f. -8,003 |

Possible Solutions

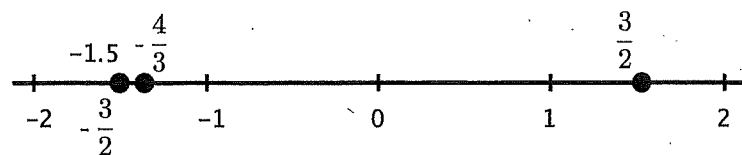
- a. 5
- b. -28
- c. 10.4
- d. -0.875
- e. 0
- f. 8,003

Problem 2

Plot the numbers -1.5 , $\frac{3}{2}$, $-\frac{3}{2}$, and $-\frac{4}{3}$ on the number line. Label each point with its numeric value.



Possible Solutions



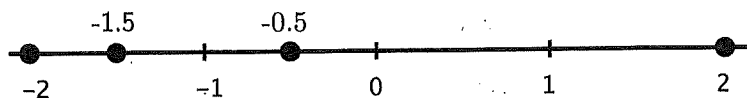
Lesson 2 Practice Problems

Problem 3

Plot the following points on a number line.

- -1.5
- the opposite of -2
- the opposite of 0.5
- -2

Possible Solutions



Problem 4

From Grade 6, Unit 7, Lesson 1

- Represent each of these temperatures in degrees Fahrenheit with a positive or negative number.
 - 5 degrees above zero
 - 3 degrees below zero
 - 6 degrees above zero
 - $2\frac{3}{4}$ degrees below zero
- Order the temperatures above from the coldest to the warmest.

Possible Solutions

- 5, -3, 6, $-2\frac{3}{4}$
- 3, $-2\frac{3}{4}$, 5, 6

Problem 5

From Grade 6, Unit 6, Lesson 5

Solve each equation.

- $8x = \frac{2}{3}$
- $1\frac{1}{2} = 2x$



c. $5x = \frac{2}{7}$

d. $\frac{1}{4}x = 5$

e. $\frac{1}{5} = \frac{2}{3}x$

Possible Solutions

a. $x = \frac{2}{24}$ (or equivalent)

b. $x = \frac{3}{4}$ (or equivalent)

c. $x = \frac{2}{35}$ (or equivalent)

d. $x = 20$

e. $x = \frac{3}{10}$ (or equivalent)

Problem 6

From Grade 6, Unit 6, Lesson 5

Write the solution to each equation as a fraction and as a decimal.

a. $2x = 3$

b. $5y = 3$

c. $0.3z = 0.009$

Possible Solutions

a. $x = \frac{3}{2}$ or $x = 1.5$

b. $y = \frac{3}{5}$ or $y = 0.6$

c. $z = \frac{0.009}{0.3}$ or $z = 0.03$ or $z = \frac{3}{100}$

Problem 7

From Grade 6, Unit 3, Lesson 4

There are 15.24 centimeters in 6 inches.

a. How many centimeters are in 1 foot?

b. How many centimeters are in 1 yard?

