

Practice
4-6***Distance on the Number Line***

1. Find the distance between the numbers 3.9 and 8.3.
2. Suppose an airplane is flying 11,000 feet above the ground. Another airplane is directly above at 35,000 feet above the ground. How far apart are the airplanes?
3. Find the distance between -422 and 166 .
4. Mischa dives from a platform that is 5 meters above water. Her dive takes her 2.1 meters below the surface of the water. How far does Mischa's dive take her?
5. Which of the expressions represent the distance between -8 and 7 on a number line? Check all that apply.

<input type="checkbox"/> A. $ -8 + 7 $	<input type="checkbox"/> D. $ 8 - 7 $
<input type="checkbox"/> B. $ 7 + 8 $	<input type="checkbox"/> E. $ 7 - 8 $
<input type="checkbox"/> C. $ -7 + 8 $	<input type="checkbox"/> F. $ -8 - 7 $
6. Which of the pairs of numbers are 13.7 units apart on a number line? Check all that apply.

<input type="checkbox"/> A. -26.3 and -12.6	<input type="checkbox"/> D. 3.2 and 10.5
<input type="checkbox"/> B. -26.3 and 12.6	<input type="checkbox"/> E. -3.2 and 10.5
<input type="checkbox"/> C. -3.2 and -10.5	<input type="checkbox"/> F. 26.3 and -12.6
7. **Mental Math** Find the distance between the numbers 420 and 450 on a number line.

8. **Reasoning** A group of friends are rock climbing. Travis is 30.7 feet above the ground. Shayla is directly below Travis at 17.7 feet above the ground.
- How far apart are they?
 - Kiera and Alfonso are climbing another wall. Kiera is 17.7 feet above the ground. Alfonso is directly above Kiera at 30.7 feet above the ground. How far apart are they?
 - Write two different equations for finding the two distances. Explain why the answers are alike or different.
9. **Writing** Suppose a diver is swimming 13.2 feet below sea level. A whale is swimming 851 feet below sea level.
- How much lower is the whale than the diver?
 - How would this distance change if the diver was at 13.2 feet above sea level? Explain your answer.
10. **Marine Biology** A group of marine biologists are scuba diving. For safety, they dive in pairs. The two divers in a pair must be, at most, 35 feet away from each other at all times. One diver is 122 feet below sea level. The other diver is directly below at 159 feet below sea level.
- How far apart are the divers?
 - Are they within the maximum distance allowed?

11. Error Analysis A student incorrectly writes the distance between -57 and -34 on the number line as $|-57 - 34|$.

a) Which expression represents the distance between -57 and -34 on the number line?

- A. $|34 + 57|$
- B. $|57 + 34|$
- C. $|-57 + 34|$
- D. $|-34 - 57|$

b) What was the student's likely error?

- A. The student wrote the terms in the wrong order.
- B. The student subtracted the numbers instead of adding.
- C. The student did not first write the absolute value of each number.
- D. The student added the numbers instead of subtracting.

12. Suppose City A is 44.4 km east of City B. City C is 127.5 km east of City B. How far apart are City A and City C?

13. Suppose two friends are standing next to each other. One friend runs 29.5 yards in one direction. The other friend runs 19.6 yards in the opposite direction, stops, and then continues in the same direction for 12.6 more yards. How far apart are the friends?

14. Think About the Process

a) How can you find the distance between the numbers $3\frac{1}{4}$ and $6\frac{5}{8}$ on the number line? Check all that apply.

- A. Find the quotient of $6\frac{5}{8}$ divided by $3\frac{1}{4}$.
- B. Find the absolute value of $6\frac{5}{8} - 3\frac{1}{4}$.
- C. Find the product of $3\frac{1}{4}$ and $6\frac{5}{8}$.
- D. Find the sum of $3\frac{1}{4}$ and $6\frac{5}{8}$.
- E. Find the absolute value of $3\frac{1}{4} - 6\frac{5}{8}$.

b) What is the distance between $3\frac{1}{4}$ and $6\frac{5}{8}$ on the number line?

15. Think About the Process

- a) Without finding the distance, decide if the distance between $-7,981$ and $-13,540$ on the number line is positive or negative.
- b) Find the distance between $-7,981$ and $-13,450$ on the number line.