

Practice: Understanding Positive and Negative Numbers



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Date: 11/25/26

Type: PRACTICE

Instructions: Complete each problem involving positive and negative numbers. Use the number line to help visualize positions, find opposites, and calculate absolute values. Show your work where appropriate.

1. What integer represents 8 degrees below zero?

Answer: -8

2. What is the opposite of +15?

Answer: -15

3. Find the absolute value: $|-7|$

Answer: 7

4. Which number is further from zero on the number line: -12 or +9?

Answer: -12

5. What integer represents a gain of 25 points?

Answer: +25

6. Find the absolute value: $|0|$

Answer: 0

7. What is the opposite of the opposite of -6?

Answer: +6

8. Order these integers from least to greatest: 4, -8, 0, -2, 7

Answer: -8, -2, 0, 4, 7

9. A submarine is 45 feet below sea level. What integer represents its position?

Answer: -45

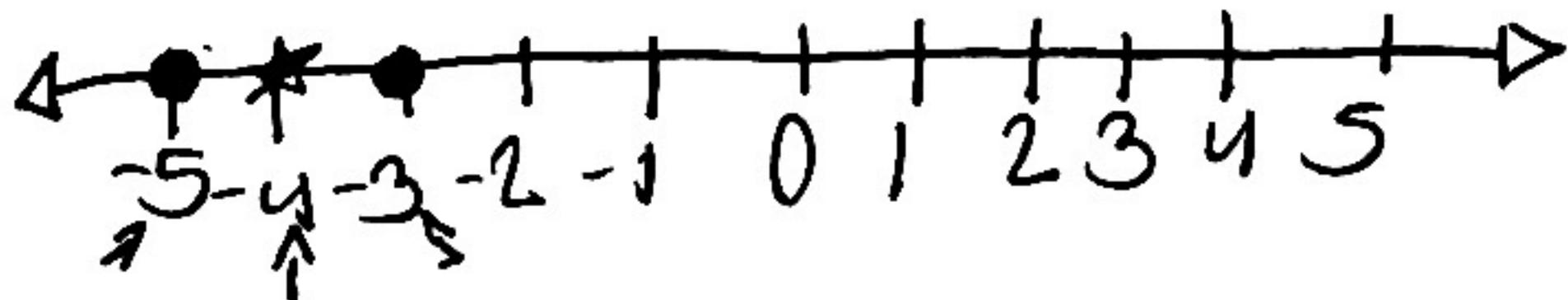
10. Find the absolute value: $|+13|$

Answer: 13

11. Which integer is between -5 and -3 on the number line?

Answer: -4

Show your work:



12. Sarah's bank account shows a balance of -\$18. She deposits \$25. Express both amounts as integers.

Answer: -18, 25

Show your work:

13. Find: $|-24| + |+8|$

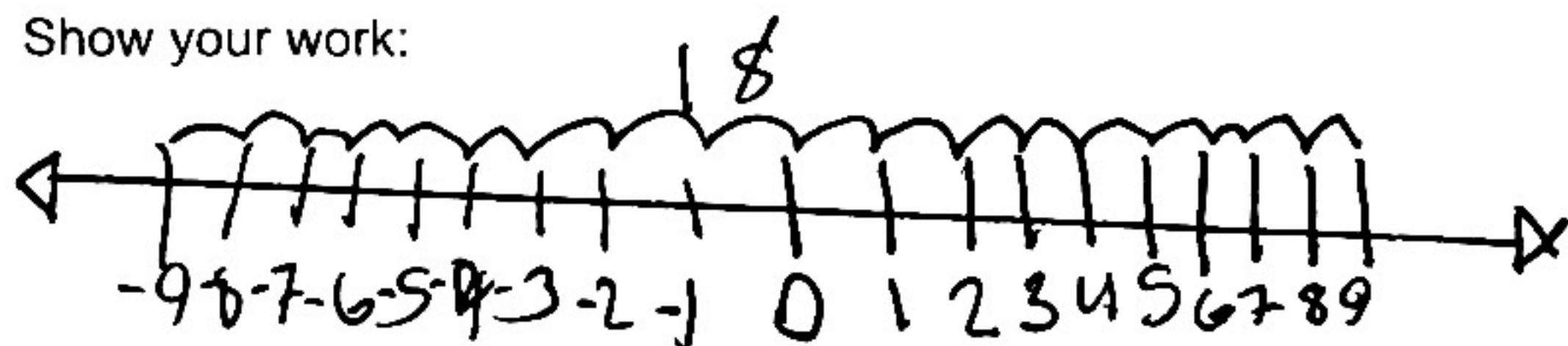
Answer: 16

Show your work:

14. What is the distance between -9 and +9 on the number line?

Answer: 18

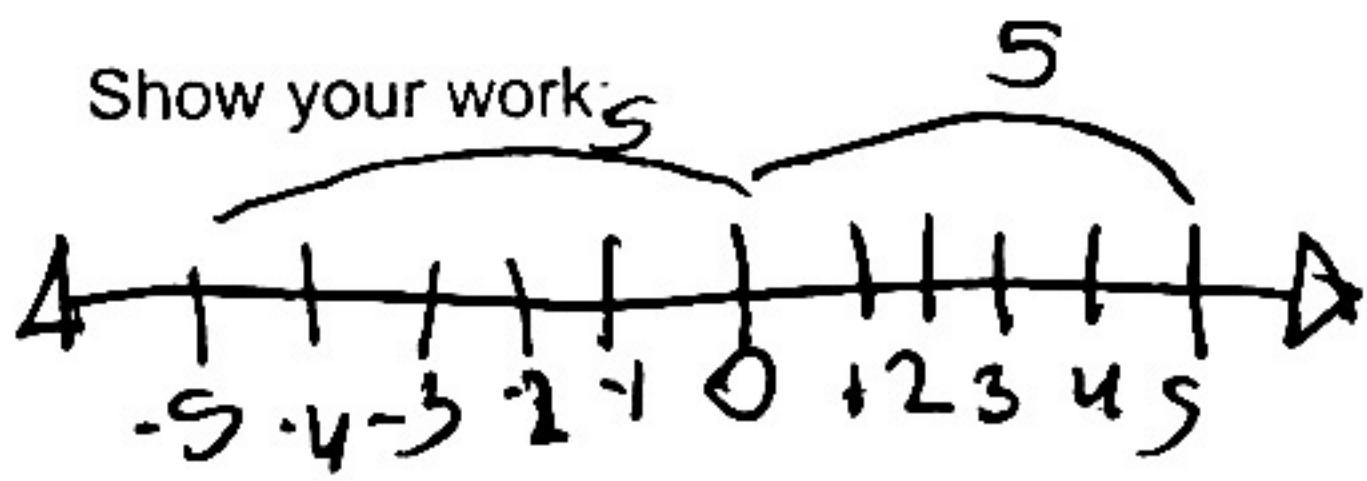
Show your work:



15. True or False: The absolute value of any integer is always positive.

Answer: Yes.

Show your work:

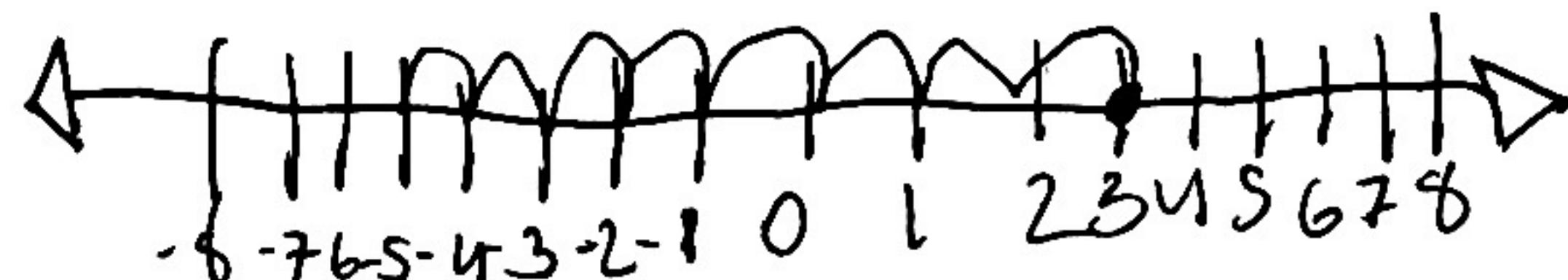


The distance between any number and 0 is a positive number.

16. If the temperature drops 8 degrees from 3°F, what integer represents the final temperature?

Answer: -5

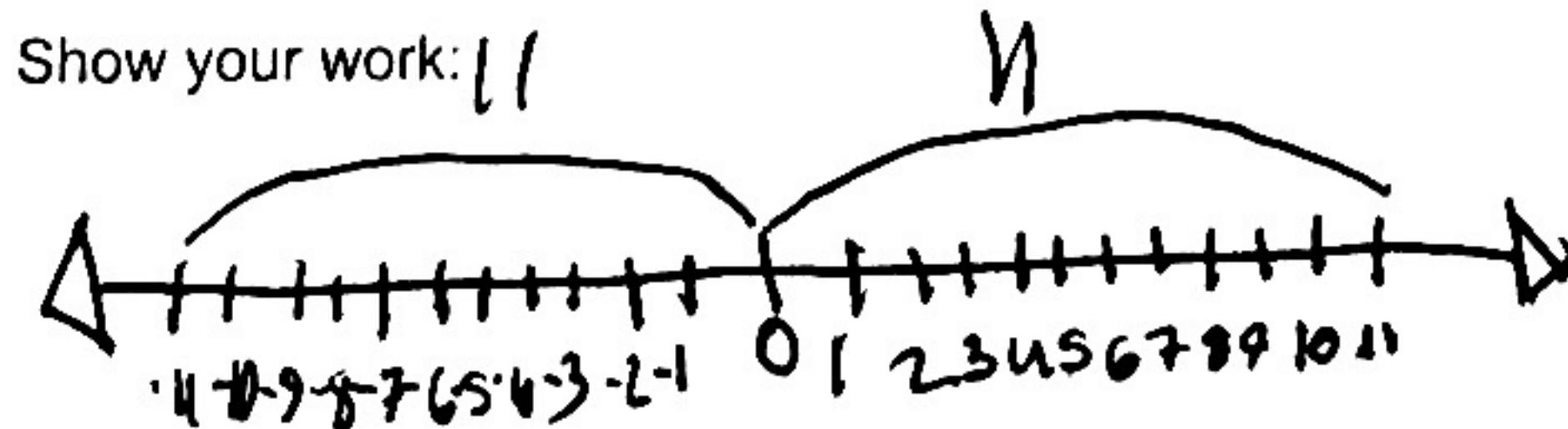
Show your work:



17. Find all integers whose absolute value is 11.

Answer: -11, 11

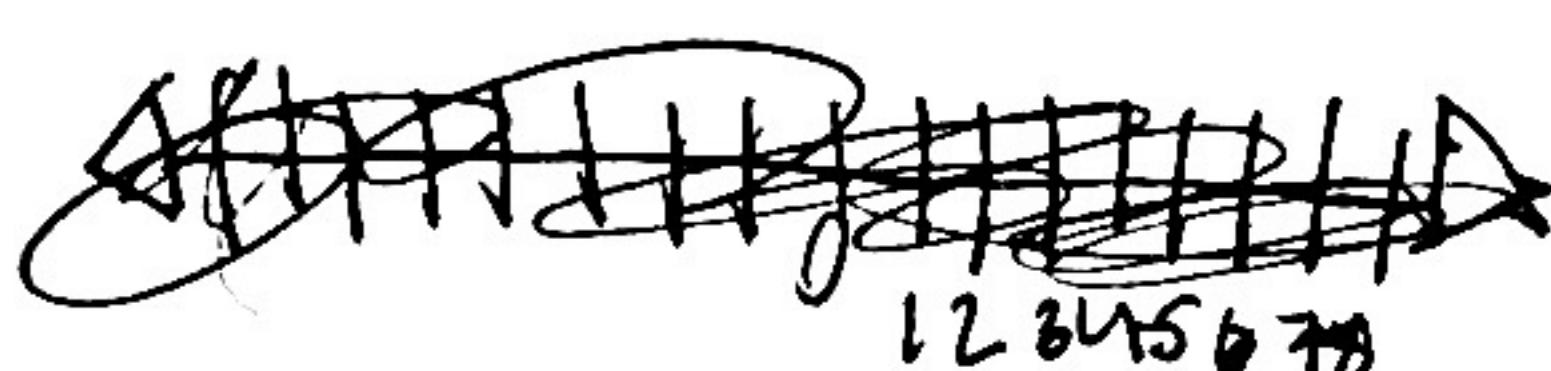
Show your work:



18. Order from greatest to least: $|-6|$, -10 , $|+4|$, $|-1|$

Answer: ~~-10~~ ~~6, 4, 1, -10~~

Show your work:



19. What is the opposite of $|-15|$?

Answer: -15

Show your work:

$$|-15| = 15$$

Opposite $\leftarrow -15$

20. A football team gains 12 yards, then loses 8 yards, then loses 15 yards. Express each change as an integer.

Answer: 12, -8, -15

Show your work:

21. Find the value of $-|-7|$

Answer: -7

Show your work:

$$-|-7| = -|-7| = -7$$

-7

22. If $|x| = 16$, what are all possible values of x ?

Answer: -16, 16

Show your work:

$$|x| = 16 \text{ (away from 0)}$$

$$|x| = x, -x$$

$$|16| = 16, -16$$

$$\begin{aligned} |-6| &= 6 & |-1| &= 1 \\ -10 &= -10 & |+4| &= 4 \\ |+4| &= 4 & \frac{-10}{\text{least}} & \frac{1}{\text{ }} \frac{4}{\text{ }} \frac{6}{\text{greater}} \end{aligned}$$

23. The difference between the absolute values of two opposites is always what number?

Answer: I don't understand this problem.

Show your work:

24. A mountain peak is 847 feet above sea level, and a cave is 234 feet below sea level. What is the difference in their distances from sea level?

Answer: 613 ft

Show your work:

$$\begin{array}{r} -234 \\ + 234 \\ \hline 0 \end{array} \quad \begin{array}{r} 847 \\ - 234 \\ \hline 613 \end{array} \quad \begin{array}{r} 613 \\ + 0 \\ \hline 613 \end{array}$$

25. Evaluate: $|-(-|+9|)|$

Answer: 9

Show your work:

$$|-(-|+9|)|$$

$$|- -9 |$$

$$| 9 |$$

$$9$$