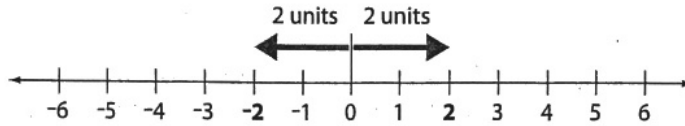


HW

Understanding Numbers and Absolute Value

The **absolute value** of a number is its distance from 0 on a number line. Look at 2 and -2. They are both 2 units away from 0.



2 is 2 units from 0. The absolute value of 2 is 2.

-2 is 2 units from 0. The absolute value of -2 is 2.

$|2| = 2$ is read as *the absolute value of 2 equals 2*.

$|-2| = 2$ is read as *the absolute value of -2 equals 2*.

$|3| = 3$

$|-4| = 4$

$|1| = 1$

$|-5| = 5$

Find the absolute value of each number.

1. $|6| =$ _____

2. $|-9| =$ _____

3. $|-8| =$ _____

4. $|-13| =$ _____

5. $|18| =$ _____

6. $|-3| =$ _____

7. $|10| =$ _____

8. $|-15| =$ _____

9. $|-7| =$ _____

10. $|0| =$ _____

11. $|-17| =$ _____

12. $|22| =$ _____

13. $|-12| =$ _____

14. $|-19| =$ _____

15. $|-11| =$ _____

16. $|26| =$ _____

Name the two numbers that have the given absolute value.

17. 30

30, -30

18. 14

19. 32

20. 29

21. 21

22. 23

23. 42

24. 99

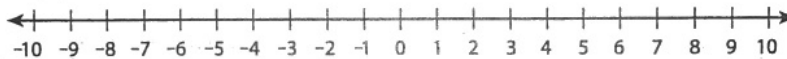
The Number Line

Positive numbers are numbers greater than 0. They are located to the right of 0 on a number line.
Negative numbers are numbers less than 0. They are located to the left of 0 on a number line. The number 0 is neither positive nor negative.

The elevation of a location describes its height above or below sea level, which has elevation 0. Elevations below sea level are represented by negative numbers, and elevations above sea level are represented by positive numbers.

1. The table shows the elevations of several locations in a state park. Graph the locations on the number line according to their elevations.

Location	Little Butte <i>A</i>	Cradle Creek <i>B</i>	Dinosaur Valley <i>C</i>	Mesa Ridge <i>D</i>	Juniper Trail <i>E</i>
Elevation (ft)	5	-5	-8.5	8	-3

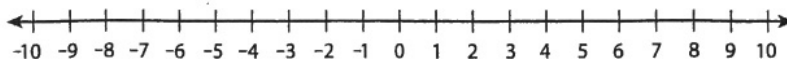


2. What point on the number line represents sea level? _____
3. Which location is closest to sea level? How do you know?

4. Is the location in Exercise 3 above or below sea level? _____
5. Which two locations are the same distance from sea level? Are these locations above or below sea level?

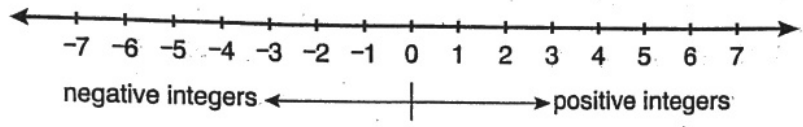
6. The table below shows winter temperatures of several world cities. Graph the cities on the number line according to their temperatures.

City	Anchorage, AK, USA <i>F</i>	Fargo, ND, USA <i>G</i>	Oslo, Norway <i>H</i>	St. Petersburg, Russia <i>I</i>	Helsinki, Finland <i>J</i>	Budapest, Hungary <i>K</i>
Temperature (°F)	-4	9	-6	-10	7	6



Integers and Opposites

Integers are the set of whole numbers and their **opposites**. Integers can be shown on a number line. **Positive** integers are greater than 0. **Negative** integers are less than 0.



The integer -5 is read *negative five*. The integer 5 can also be written as $+5$, or *positive five*. These two integers, 5 and -5 , are opposites.

Positive and negative numbers are used in many everyday situations.

- | | |
|-----------------------|-----------------|
| 10° below zero | -10 |
| loss of \$7 | -7 |
| gain of 12 yards | $+12$ or 12 |
| profit of \$100 | $+100$ or 100 |

Write the opposite of each integer.

- | | | | |
|-------------------|------------------|-------------------|------------------|
| 1. 4
_____ | 2. -7
_____ | 3. -21
_____ | 4. 45
_____ |
| 5. -19
_____ | 6. 33
_____ | 7. -66
_____ | 8. 0
_____ |

Write an integer to describe each situation.

- | | | |
|---------------------------------------|------------------------------------|---------------------------------------|
| 9. 33° above zero
_____ | 10. 8° below zero
_____ | 11. deposit of \$150
_____ |
| 12. loss of 10 yards
_____ | 13. gain of 6 yards
_____ | 14. profit of \$88
_____ |
| 15. 3,500 ft above sea level
_____ | 16. 50 ft below sea level
_____ | 17. up 7 floors
_____ |
| 18. down 4 floors
_____ | 19. debt of \$30
_____ | 20. 9 units to the left of 0
_____ |