

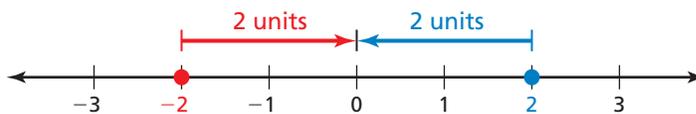
Key Idea

Absolute Value

Words The **absolute value** of a number is the distance between the number and 0 on a number line. The absolute value of a number a is written as $|a|$.

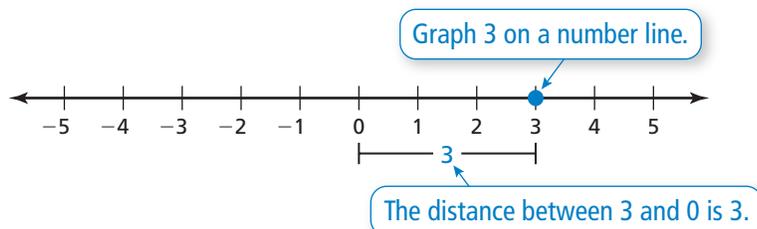
Numbers

$$|-2| = 2 \quad |2| = 2$$



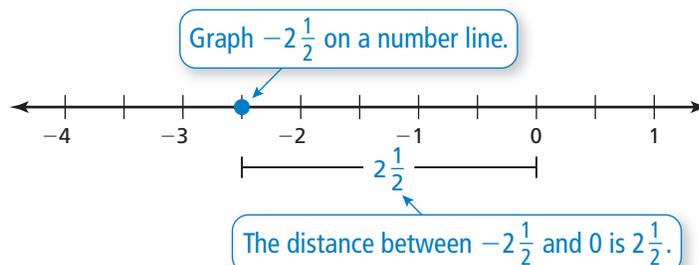
EXAMPLE 1 Finding Absolute Value

- a. Find the absolute value of 3.



∴ So, $|3| = 3$.

- b. Find the absolute value of $-2\frac{1}{2}$.



∴ So, $|-2\frac{1}{2}| = 2\frac{1}{2}$.

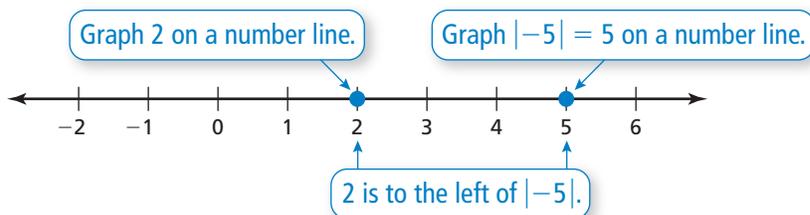
Practice

Find the absolute value.

- | | | | |
|--------------|--------------------|---------------------|----------------------|
| 1. $ 5 $ | 2. $ -6 $ | 3. $ 0 $ | 4. $ 1.9 $ |
| 5. $ -12.6 $ | 6. $ \frac{1}{5} $ | 7. $ \frac{-9}{2} $ | 8. $ -6\frac{1}{3} $ |

EXAMPLE 2 Comparing Values

Compare 2 and $|-5|$.



So, $2 < |-5|$.

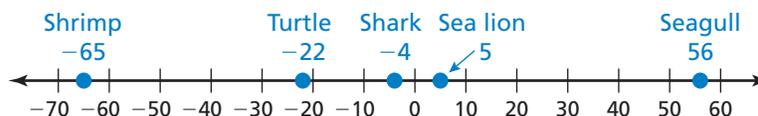
EXAMPLE 3 Real-Life Application

Animal	Elevation (ft)
Shark	-4
Sea lion	5
Seagull	56
Shrimp	-65
Turtle	-22

The table shows the elevations of several animals.

a. Which animal is the deepest? Explain.

Graph each elevation.



The lowest elevation represents the animal that is the deepest. The integer farthest to the left on the number line is -65 .

So, the shrimp is the deepest.

b. Is the shark or the sea lion closer to sea level?

Because sea level is at 0 feet, use absolute values.

$$\text{Shark: } |-4| = 4 \quad \text{Sea lion: } |5| = 5$$

The shark is 4 feet from sea level and the sea lion is 5 feet from sea level.

Because 4 is less than 5, the shark is closer to sea level than the sea lion.



Practice

Copy and complete the statement using $<$, $>$, or $=$.

9. $|-4|$ \square 4 10. -2 \square $|2.4|$ 11. $|-9.72|$ \square 9.7 12. $\frac{3}{4}$ \square $|\frac{-3}{2}|$

13. **CAVES** Three scientists explore a cave. Which scientist is farthest underground?

Scientist A: -48 ft

Scientist B: -62 ft

Scientist C: -53 ft

MATCHING Match the account balance with the debt that it represents. Explain your reasoning.

14. Account balance = $-\$25$

15. Account balance $< -\$25$

16. Account balance $> -\$25$

A. Debt $> \$25$

B. Debt = $\$25$

C. Debt $< \$25$