

I Can Use the Number Line to Evaluate Numerical Expressions involving Negative Numbers.

"I Can Explain How Positive and Negative Numbers Relate to Real-World Examples and the Meaning of of in each."

## Evaluating on the Number Line

Consider the Following Statement:

**The Opposite of a Number's Opposite is the Number Itself.**

What's the opposite of 6? \_\_\_\_\_ What's the opposite of this number? \_\_\_\_\_

A " - " Sign means the  
Opposite of a Number

**The Opposite of 6:**  $-(6) = -6$

**So**  $-(6) = -6$

**The Opposite of -6:**  $-(-6) = 6$

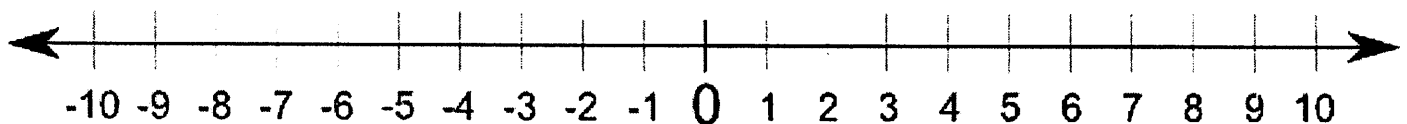
**So**  $-(-6) = 6$

a)  $-(7) =$

b)  $-(-3) =$

c)  $-(-(-2)) =$

Evaluate using the Number Line.



a)  $4 - 9 =$

b)  $-1 - 8 =$

c)  $9 - 15 + 3 =$

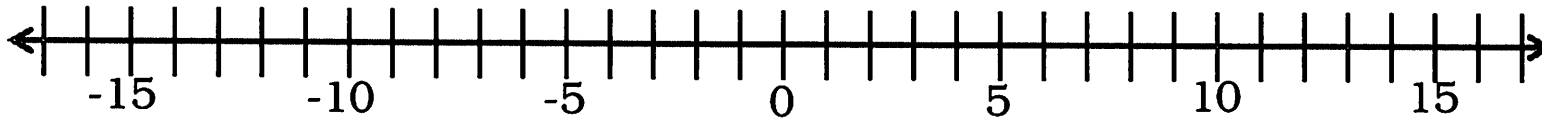
d)  $2 - (-6) =$

e)  $-3 + 9 =$

f)  $-1 - (-5) =$

A police officer drives out of the station to patrol the East/West Highway. The officer first travels 10 miles east, then reverses direction and travels 16 miles west to help with an accident. From there the officer travels 8 more miles west, then reverses direction and travels 26 miles east to help with traffic around a construction site. The trips are summarized in the table below.

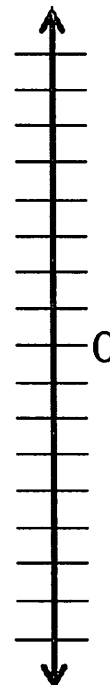
<b>Patrolling the East/West Highway</b>	
Westbound (Miles)	Eastbound (Miles)
-16 (Trip 2)	+ 10 (Trip 1)
-8 (Trip 3)	+ 26 (Trip 4)



- a) How many miles has the officer traveled for where he started?
  
- b) How many miles, and in which direction, must the officer travel to return to the station?

### Got It?

A worker drives into the parking garage of a bank building in a large city. She enters the garage on the first floor, and then drives 4 floors down to park. She then gets into an elevator and goes to her office on the buildings eighth floor. Each floor of the building is about 10 feet high. How far did the worker travel on the elevator?



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## Evaluating on the Number Line

Consider the Following Statement:

**The Opposite of a Number's Opposite is the Number Itself.**

What's the opposite of 6? -6      What's the opposite of this number? 6

A " - " Sign means the  
Opposite of a Number

**The Opposite of 6:**  $-(6) = -6$

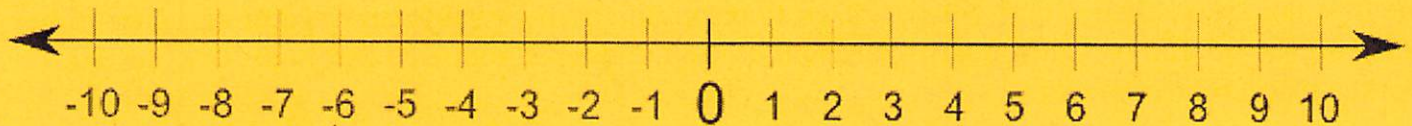
**So**  $-(6) = -6$

**The Opposite of -6:**  $-(-6) = 6$

**So**  $-(-6) = 6$

a)  $-(7) = -7$       b)  $-(-3) = 3$       c)  $-(-(-2)) = -2$

Evaluate using the Number Line.

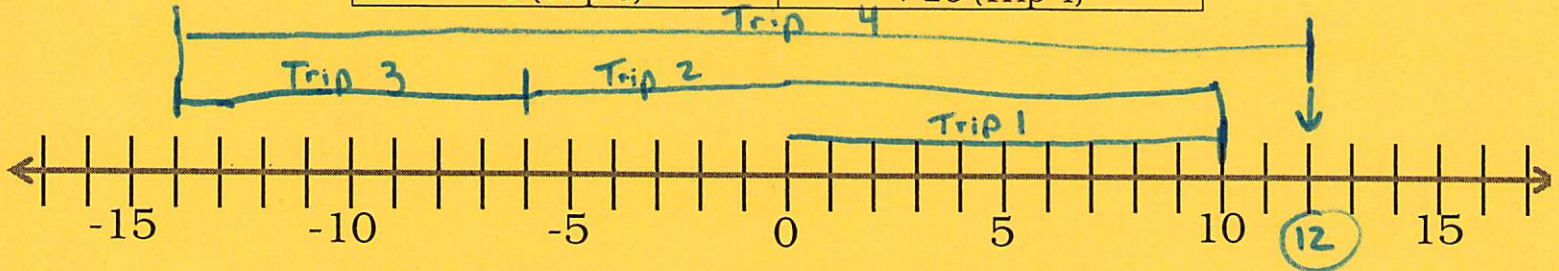


a)  $4 - 9 = -5$       b)  $-1 - 8 = -9$       c)  $9 - 15 + 3 = -3$

d)  $2 - (-6) = 8$       e)  $-3 + 9 = 6$       f)  $-1 - (-5) = 4$

A police officer drives out of the station to patrol the East/West Highway. The officer first travels 10 miles east, then reverses direction and travels 16 miles west to help with an accident. From there the officer travels 8 more miles west, then reverses direction and travels 26 miles east to help with traffic around a construction site. The trips are summarized in the table below.

Patrolling the East/West Highway	
Westbound (Miles)	Eastbound (Miles)
-16 (Trip 2)	+ 10 (Trip 1)
-8 (Trip 3)	+ 26 (Trip 4)



a) How many miles has the officer traveled for where he started?

12 miles east

b) How many miles, and in which direction, must the officer travel to return to the station?

12 miles west

### Got It?

A worker drives into the parking garage of a bank building in a large city. She enters the garage on the first floor, and then drives 4 floors down to park. She then gets into an elevator and goes to her office on the buildings eighth floor. Each floor of the building is about 10 feet high. How far did the worker travel on the elevator?

She traveled 11 floors

$$11 \times 10 = 110 \text{ ft}$$

