

Indicator 10 Class Notes by Mrs. Joshi

The Number Line

Positive numbers are greater than 0. They can be written with or without a positive sign (+).

+1 5 +20 10,000

Negative numbers are less than 0. They are written with a negative sign (-).

-1 -5 -20 -10,000

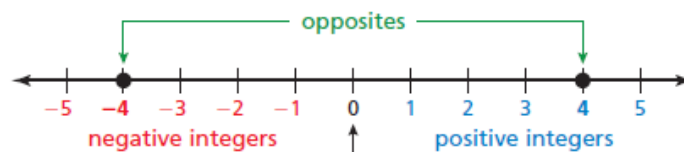
Two numbers that are the same distance from 0 on a number line, but on opposite sides of 0, are called **opposites**.

Key Idea

Integers

Words **Integers** are the set of whole numbers and their opposites.

Graph



Zero is neither negative nor positive. Zero is its own opposite.

EXAMPLE 1 Writing Positive and Negative Integers

Write a positive or negative Integer that represents the situation.

- a. A contestant gains 250 points on a game show.

“Gains” indicates a number greater than 0. So, use a positive integer.

⋮ +250, or 250

- b. Gasoline freezes at 40 degrees below zero.

“Below zero” indicates a number less than 0. So, use a negative integer.

⋮ -40

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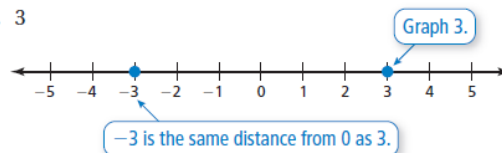
EXAMPLE 2 Graphing Integers

Reading

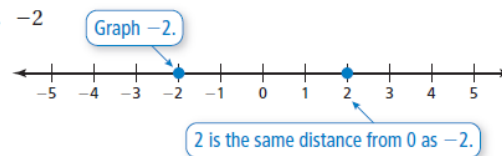
You can think of the negative sign ($-$) as referring to the opposite of a number. For example, you can read -2 as "the opposite of 2."

Graph each integer and its opposite.

a. 3



b. -2



EXAMPLE 3 Real-Life Application



You deliver flowers to an office building. You enter at ground level and go down two floors to make the first delivery. Then you go up seven floors to make the second delivery. Write an integer that represents the return to ground level.

Use a vertical number line to model your movement, as shown.

The second delivery is on the fifth floor. You must go down five floors to return to ground level.

❖ The integer representing "down five floors" is -5 .

