

What Is an Integer?



Quick Review

► Numbers such as +16 and -12 are **integers**.

+16 is a **positive integer**.

-12 is a **negative integer**.

We can use coloured tiles to represent integers.

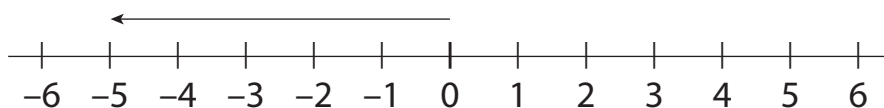
□ represents +1.

□ □ □ □ represents +4.

■ represents -1.

■ ■ ■ ■ represents -4.

► We can show integers on a number line.

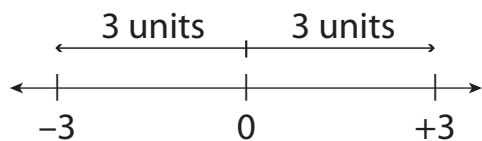


The arrow on the number line represents -5.

-5 is a negative integer. We say, "Negative 5."

► +3 and -3 are **opposite integers**.

They are the same distance from 0 and are on opposite sides of 0.



Try These

1. Write the integers modelled by each set of tiles.

a) □ □ □ □ □ □

b) ■ ■ ■

c) ■

2. Write the opposite of each integer.

a) +7 _____

b) -23 _____

c) -9 _____

d) -16 _____

e) +38 _____

f) 24 _____

Practice

1. Write an integer to represent each situation.

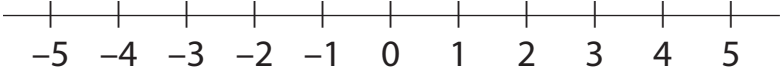
a) Sal withdrew \$45 from his savings account. _____

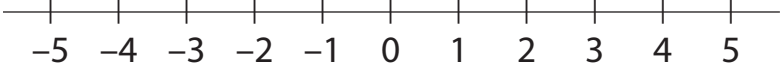
b) Ethanol freezes at minus 114°C. _____

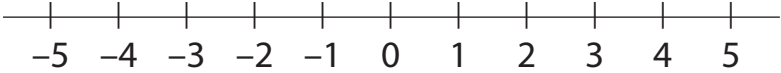
c) Justina earned \$35 babysitting. _____

2. Write the opposite of each integer.

Mark each pair of integers on the number line.

a) +4 _____ 

b) -2 _____ 

c) +1 _____ 

3. Explain.

a) If +9 represents 9 steps forward, what does -9 represent?

b) If -5 represents 5 dollars spent, what does +5 represent?

c) If +14 represents 14 floors up, what does -6 represent?

Stretch Your Thinking

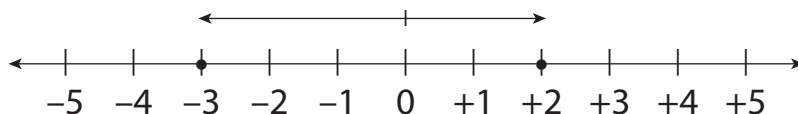
Find examples of unusual temperatures, such as boiling and freezing points of various liquids, on other planets. Record your findings.

Comparing and Ordering Integers



Quick Review

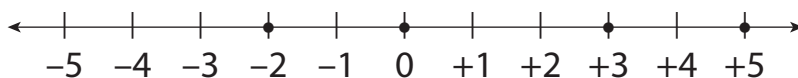
- We can use a number line to compare and order integers. Compare +2 and -3.



+2 is to the right of -3 on a number line.
 +2 is greater than -3, so we write: $+2 > -3$
 -3 is less than +2, so we write: $-3 < +2$

- To order the integers +3, -2, 0, and +5, draw a number line from -5 to +5.

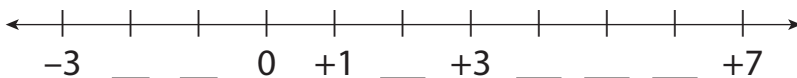
Mark each integer on the number line.



The integers increase from left to right.
 So, the integers from least to greatest are: -2, 0, +3, +5
 The integers from greatest to least are: +5, +3, 0, -2

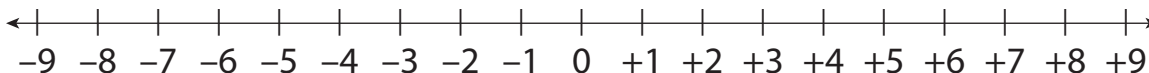
Try These

- Fill in the missing integers.



- Use $>$ or $<$ between the integers. Use the number line to help you.

- a) $+9$ _____ 0 b) $+7$ _____ $+2$ c) -2 _____ $+8$
 d) -8 _____ -1 e) $+4$ _____ $+8$ f) $+3$ _____ -6



Practice

- Circle the least integer in each set.
 - $+12, +3, +8$
 - $0, +5, -7$
 - $-8, +8, -9, +9$
 - $+6, -4, -2, 0$
 - $-10, -3, +3, 0$
 - $-5, +10, -20, +40$
- Order the integers in each set from least to greatest.
 - $0, +8, -8$ _____
 - $-5, +2, -9$ _____
 - $-20, +1, -1$ _____
 - $-27, -33, +30, -24$ _____
- Order the integers in each set from greatest to least.
 - $+2, +4, -3$ _____
 - $-3, +1, -4$ _____
 - $+2, +7, -18$ _____
 - $0, +20, -50, -60$ _____
- Which of these integers are greater than -7 ?
 $-2, +1, -9, -4$ _____
 - Which of these integers are less than -8 ?
 $-4, -11, -14, +2$ _____
- Name 3 integers greater than -11 .

 - Name 3 integers less than -4 .

Stretch Your Thinking

Use a number line. Find the integer that is:

- halfway between -6 and $+6$ _____
- 3 more than -4 _____
- halfway between -5 and $+1$ _____
- 1 less than $+3$ _____

