6.3

Fractions and Decimals on a Number Line

Do Now

Let's say that the following are the times for the events in a day for an astronaut. Represent each using a fraction or a mixed number.

a. Radio Transmission: 10:30 a.m.

b. Space Walk: 7:30 p.m.

c. Physical Exam: 4:45 a.m.

d. Photograph Taken: 3:15 a.m.

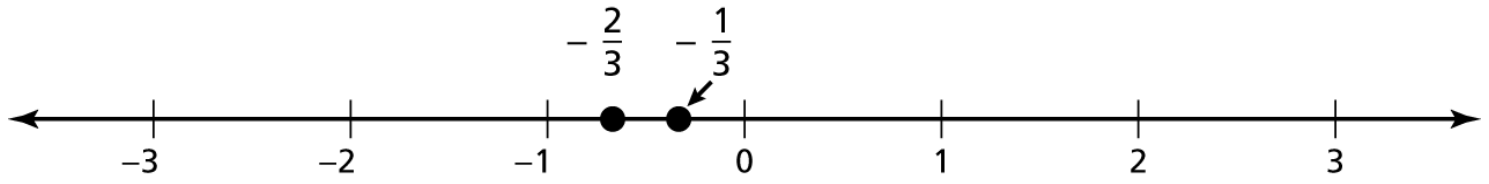
e. Float in the Cabin: 6:20 p.m.

f. Eat Dinner: 8:40 p.m.

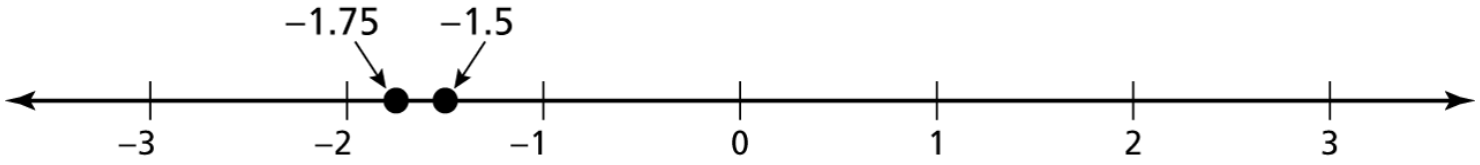
Exploring – Deeping Into Number Lines

Work with a partner. Find a number that is between the two numbers. The number must be greater than the number on the left *and* less than the number on the right.

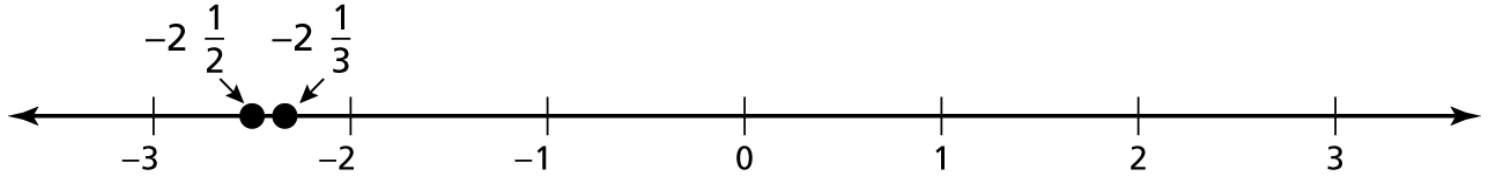
a)



b)



c)

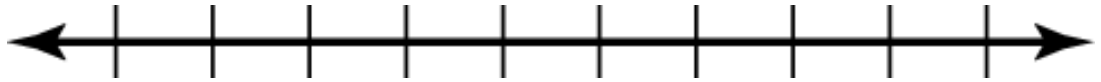


Example 1

Graph each number and its opposite.

a. $\frac{3}{4}$

b. -1.6



Example 2

a. Compare $-\frac{1}{2}$ and $-\frac{3}{4}$.

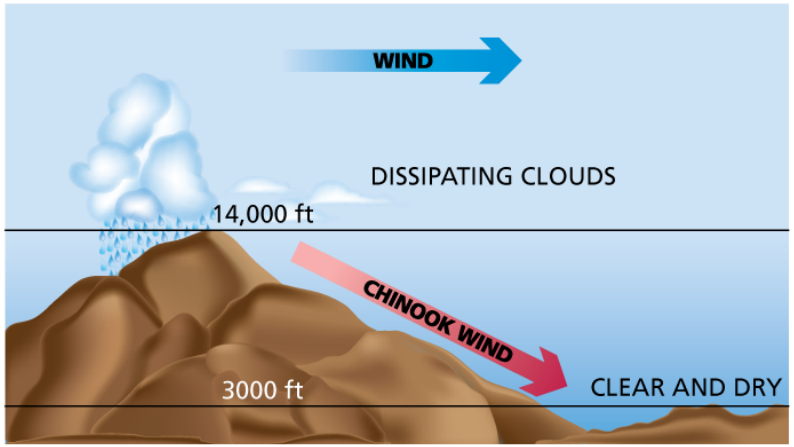
b. Compare $-4\frac{5}{6}$ and $-4\frac{1}{6}$.

Example 3

Compare -3.08 and -3.8.

Real-Life Application

A *Chinook wind* is a warm mountain wind that can cause rapid temperature changes. The table shows three of the greatest temperature drops ever recorded after a Chinook wind occurred. On which date did the temperature drop the fastest? Explain.



Date	Temperature Change
January 10, 1911	$-3\frac{1}{10}$°F per minute
November 10, 1911	$-\frac{5}{8}$°F per minute
January 22, 1943	$-2\frac{1}{5}$°F per minute

Practice

complete the statement using < or >.

1) $-\frac{4}{7} \square -\frac{1}{7}$

2) $-1\frac{2}{3} \square -1\frac{5}{6}$

3) $-0.5 \square 0.3$

1.2 – Powers and Exponents

Write each product as a power.

1) $8 \cdot 8 \cdot 8 \cdot 8$

2) $15(15)(15)$

1.2 – Powers and Exponents

Find the value of each power.

3) 7^3

4) 6^4

1.2 – Powers and Exponents

Describe and correct the error in writing the value of the product.

5) $2 \times 2 \times 2 \times 2 = 4^2$

6) $5^3 = 15$

Practice

Evaluate the following

P E M D A S

Left → Right Left → Right

7) $\left(49-5^2\right)\div 2^3$

Practice

Evaluate the following

P E M D A S

Left → Right Left → Right

8) $7^2 - 5\left(10 - 3^2\right)$

Practice

Evaluate the following

P E M D A S

Left → Right Left → Right

9) $20-\left[4\left(3+2\right)\right]$

Practice

Evaluate the following

P E M D A S

Left → Right Left → Right

10) $7\left[4^2 - 2(4+1)\right]$

6.1 – Integers

Write a positive or negative integer that represents the situation.

11) You gain 60 points in a board game.

12) The temperature is 9 degrees below zero.

6.2 – Ordering and Comparing Integers

Complete the statement using < or >.

13) **-6 _____ -2**

14) **-5 _____ -7**

Order the integers from least to greatest.

15) $1, -3, -6, 5, 0$

6.4 & 11.1 – Absolute Value

Find the absolute value.

16) |-5|

17) - |-9|

Complete the statement using <, >, or =.

18) 7 _____ |-4|

19) |8| _____ |-8|

6.4 & 11.1 – Absolute Value

Order the values from least to greatest.

20) $0, -5, |-6|, |-2|, 4$

21) $|-12|, -21, |25|, |-31|, -14, 33$