Name ..... Date ..... Class .....

Labsheet 3.1 Placing Fractions on a Number Line

A.

1. Place the following fractions on the number line above.

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

2. Which of the fractions can be written as mixed numbers? Show.

B1) Mark and label the following numbers on the new number line.

B.

$\frac{1}{3}$ $1\frac{1}{3}$ $2\frac{2}{3}$ 3 $3\frac{1}{3}$ $-\frac{1}{3}$ $-1\frac{1}{3}$ $-1\frac{2}{3}$

B2. Which of these numbers can be written as improper fractions? Show.

C1. What is the opposite of ½?

C2. What is the opposite of the opposite of ½?

C3. What is the opposite of 0?

D1. What numbers have an absolute value of 1?

D2. How many numbers have an absolute value of 5/4? What are they?

D3. How many numbers have an absolute value of 0?

Read pages 62-64.

Make a foldable or use notebook paper to give examples and write a definition for the following vocabulary:

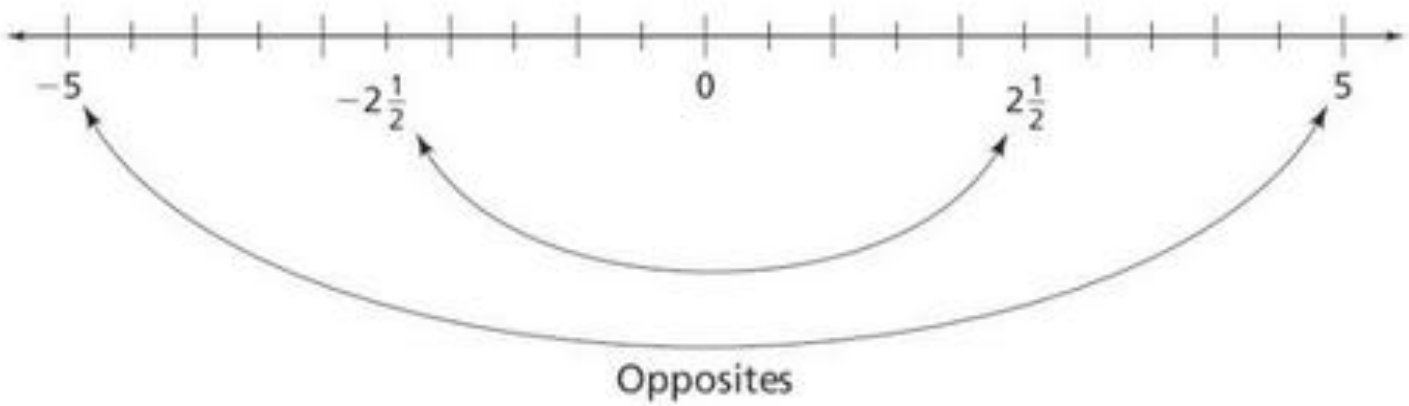
Mixed Number, Improper Fraction, Opposite, Absolute Value, & Rational Numbers

Mixed Number: Example 1 ½ because it has a whole number and it has a fraction.

Improper Fraction: Example 3/2 because it the numerator (top number) is the same as or larger than denominator (bottom number).

The mixed number 1 ½ is equivalent to the improper fraction 3/2. There is really nothing 'improper" about 3/2. In math, we often use the improper form of a fraction.

On the number line below, 5 and -5 are the same distance from 0 but in opposite directions. Therefore, 5 and -5 are **opposites.** The opposite of 5 is -5. The opposite of -5 is 5. Similarly, the opposite of $2\frac{1}{2}$ is $-2\frac{1}{2}$, and the opposite of $-2\frac{1}{2}$ is $2\frac{1}{2}$.



The **absolute value** of a number is its distance from 0 on the number line. Numbers that are the same distance from 0 have the same absolute value. The absolute value of $2\frac{1}{2}$ and the absolute value of $-2\frac{1}{2}$ are both $2\frac{1}{2}$.

You can express the absolute value of a number two ways without words.

Absolute Value Bars

$|2\frac{1}{2}| = 2\frac{1}{2}$

$|-2\frac{1}{2}| = 2\frac{1}{2}$

OR

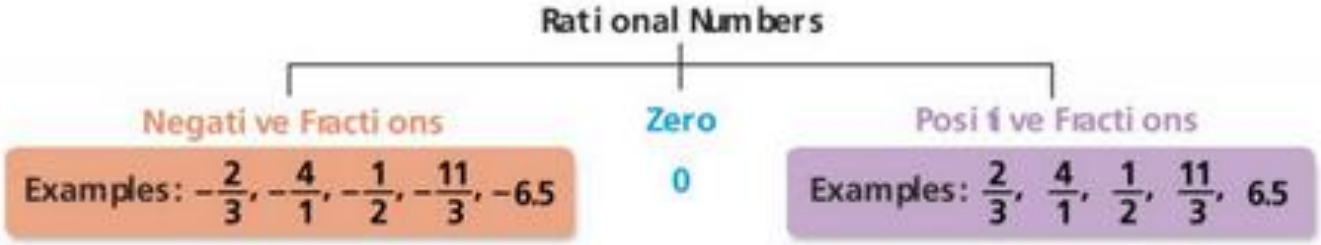
Calculator Notation

$\text{abs}\left(2\frac{1}{2}\right) = 2\frac{1}{2}$

$\text{abs}\left(-2\frac{1}{2}\right) = 2\frac{1}{2}$

- What is the opposite of $-\frac{2}{3}$? What is the opposite of $\frac{2}{3}$?
- What is the absolute value of $-\frac{2}{3}$? What is the absolute value of $\frac{2}{3}$?

Zero, whole numbers, fractions, and their opposites are **rational numbers.** The numbers $-\frac{9}{5}$, -3, 0, $\frac{2}{3}$, and $2\frac{1}{3}$ are all rational numbers.



Negative numbers can also be improper fractions. Improper fractions have an absolute value greater than or equal to 1. Both $\frac{7}{5}$ and $-\frac{7}{5}$ are improper fractions. They can be written as $1\frac{2}{5}$ and $-1\frac{2}{5}$.