

3.2 & 3.3 - Adding and Subtracting Rational Numbers

September 4, 2019 4:06 PM

Math 9

3.2 & 3.3: Adding and Subtracting Rational Numbers

In order for us to add or subtract a fraction, we need to make sure that the denominator (bottom number in the fraction) in both fractions are equal (the same).

Example 1: Add and Subtract Rational Numbers with Like Denominators

Calculate $\frac{2}{5} + \frac{1}{5}$ Denominators are already equal, so we just carry it to our answer.

$$\frac{2}{5} + \frac{1}{5} = \frac{2+1}{5} = \frac{3}{5}$$

* Keep same denominator

Example 2: Add and Subtract Rational Numbers with Unlike Denominators

Calculate $\frac{1}{2} + \frac{2}{3}$ Denominators are not equal, find lowest common denominator:

Take our denominators:

2 : 2, 4, 6, 8, ...

3 : 3, 6, 9, 12, ...

6 will be our common denominator.

$$\left. \begin{array}{l} \frac{1 \times 3}{2 \times 3} = \frac{3}{6} \\ \frac{2 \times 2}{3 \times 2} = \frac{4}{6} \end{array} \right\} \frac{1}{2} + \frac{2}{3} = \frac{3}{6} + \frac{4}{6} = \frac{3+4}{6} = \frac{7}{6}$$

OR:

Denominators are
 $2 \nmid 3$
So a common denominator
will be:
 $2 \times 3 = 6$

Then,
continue ...
as
normal

Math 9

Calculate $\frac{-5}{7} - \frac{3}{5}$

Denominators
are different.

∴
Find common
denominator

Denominators
are 7 and 5,
so a common
denominator will
be:
 $7 \times 5 = 35$

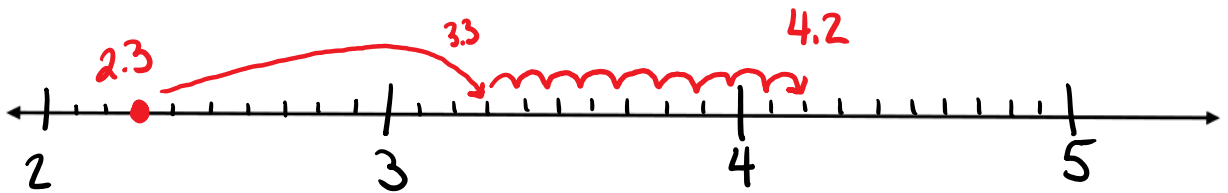
$$\frac{-5}{7} = \frac{-5 \times 5}{7 \times 5} = \frac{-25}{35}$$
$$\frac{3}{5} = \frac{3 \times 7}{5 \times 7} = \frac{21}{35}$$

$$\therefore \frac{-5}{7} - \frac{3}{5} = \frac{-25}{35} - \frac{21}{35} = \frac{-25 + (-21)}{35} = \frac{-46}{35}$$

Example 3:

Calculate $2.3 + 1.9 = 4.2$

Number line...



Line up
the decimals:

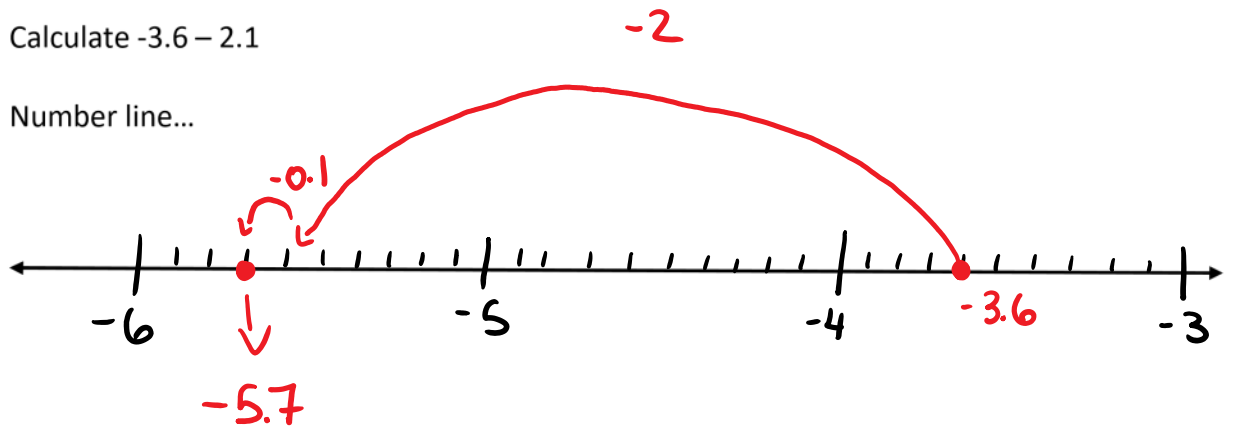
$$\begin{array}{r} 2.3 \\ + 1.9 \\ \hline 4.2 \end{array}$$

Math 9

Example 4:

Calculate $-3.6 - 2.1$

Number line...



$$-3.6 - 2.1 = -5.7$$



Textbook Assignment: Pg. 111 # 3-5, 9, 11 AND Pg. 119 # 3, 9, 11