

10/13 Adding Rational Numbers - Decimals

Reminder: what is the definition of a "rational number"?

a number that can be written as a ratio of 2 integers

FRACTION $2.1 = 2\frac{1}{10}$ $42.76 = 42\frac{76}{100}$

Are the rules for adding/subtracting decimals and fractions with positives and negatives any different than the rules for adding integers?

No!

Remember the sign rules:

Adding:

Same Signs:

*Add the numbers
Keep the sign*

$$-2 + (-3) = -5$$

Different Signs:

*Subtract the numbers
Keep the sign of the biggest #*

$$\begin{aligned} -2 + 3 &= 1 \\ 2 + (-3) &= -1 \end{aligned}$$

Subtracting:

Change the subtract to add
Change the sign of the second #

$$-2 - 3 = -5$$

"Add the opposite"

Change / change

$$2 - (+3) = -1$$

What do you do with the decimal...

$$-1.3 + 4.75$$

...setting up the problem?

- Line up the decimals!
- Write the biggest # on the top.

$$\begin{array}{r} + 4.75 \\ - 1.30 \\ \hline \end{array}$$

...when writing the answer?

Bring it straight down!

$$\begin{array}{r} 4.75 \\ - 1.30 \\ \hline 3.45 \end{array}$$

Compute each:

$$\underline{15} + \underline{(-3.8)} + \underline{-9.2}$$

change/change
FIRST!

$$\begin{array}{r} -9.2 \\ -3.8 \\ \hline -13.0 \end{array} \quad \begin{array}{r} +15 \\ -13 \\ \hline 2 \end{array}$$

$$\underline{-8} + \underline{(+9.2)} + \underline{1.8}$$
$$\begin{array}{r} +9.2 \\ +1.8 \\ \hline +11.0 \end{array} \quad \begin{array}{r} +11 \\ -8 \\ \hline 3 \end{array}$$

Compute each:

$$\underline{7.23} + (\underline{+4}) + (\underline{-6.61})$$

$$\begin{array}{r} +7.23 \\ +4.00 \\ \hline +\underline{11.23} \end{array}$$

$$\begin{array}{r} +\overset{10}{\cancel{11.23}} \\ -6.61 \\ \hline \underline{4.62} \end{array}$$

$$-\underline{13.4} + \underline{-5.7} + \underline{9.75}$$

$$\begin{array}{r} -\overset{1}{13.4} \\ -5.7 \\ \hline -\underline{19.1} \end{array}$$

$$\begin{array}{r} -\overset{8}{\cancel{19.10}} \\ +9.75 \\ \hline \underline{-9.35} \end{array}$$

HOMEWORK

DUE