L4-2 & 4-3 "+/- Rational #s (Fractions)"

A) + Fractions

Step 1: Integer Rule
- same sign = add
- different sign = subtract
- take bigger sign

2: Fraction Rule
↳ common denominator

3: determine sign

ex) $-4\frac{1}{2} + 1\frac{2}{3}$

$-4 + 1 =$ − subtract

bigger # sign

$3\frac{3}{6} + \frac{6}{6} = \frac{9}{6}$ borrow 1 whole

4	$\frac{1}{2}$ ×3	$\frac{3}{6}$	
−1	$\frac{2}{3}$ ×2	$\frac{4}{6}$	$\frac{4}{6}$
−2	$\frac{5}{6}$		$\frac{5}{6}$

$= -2\frac{5}{6}$

check $-4+1=-3$

close ☺

B) − Fractions

Step 1: Add opposite
2: Integer rule
3: Fraction rule
4: determine sign

ex) $-7\frac{3}{8} - (-2\frac{1}{4}) =$

$-7\frac{3}{8} + (+2\frac{1}{4}) =$ diff so subtract

bigger sign

7	$\frac{3}{8}$	$\frac{3}{8}$	
−2	$\frac{1}{4}$ ×2	$\frac{2}{8}$	$\frac{1}{8}$
5	$\frac{1}{8}$		

$= -5\frac{1}{8}$

check $-7-(-2)$

$-7+(+2)=-5$

☺

C) + Decimals

ex) spent $3.49 → −3.49
earn $7.22 → +7.22

Step 1: Integer rule
2: Dec rule
3: determine sign

−3.49 + 7.22 = −3 + 7 = (+4)

diff so subtract

7.22
− 3.49
3.73 = +3.73

↙ put bigger # on top
Bigger # is positive

D) −Decimals

ex) −33.22 − 93.8 = ?

Step 1: add opposite
2: Integer rule
3: Dec. rule
4: Determine sign

(est) −33 − 93 = −33 + (−93)

−33.22 − 93.8 =
−33.22 + (−93.8) = same so add

93.80
+ 33.22
127.02 = −127.02

← bigger # on top
bigger # is also negative

Check −33 − 93 =
−33 + (−93) = 93 + 33
−126 ✓

L4-2 & L4-3 "+/- Dec & Frac Rational #5"

A) Combining

ex) $\frac{7}{20} + (-4.8) = ?$

step 1: Change F→D or D→F
2: Use integer rules to see if +/-
3: use F/D rule to solve

$$\begin{array}{r} 0.35 \\ 20\overline{)7.00} \\ -60\downarrow \\ \hline 100 \\ -100 \\ \hline 0 \end{array}$$

$\frac{7}{20} = 0.35$ same → use to combine

$0.35 + (-4.8)$ ← bigger so answer will be neg. = diff signs so subtract

$$\begin{array}{r} 4.8\overset{7}{\cancel{0}}\overset{1}{0} \\ -0.35 \\ \hline 4.45 \end{array} \rightarrow \boxed{-4.45}$$

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ex) $5.6 - 1\frac{3}{8} = ?$

$\frac{3}{8}$ → 0.375

$$\begin{array}{r} 0.375 \\ 8\overline{)3.000} \\ -24\downarrow \\ \hline 60 \\ -56\downarrow \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

$5.6 - 1.375 =$

bigger & positive

$$\begin{array}{r} 5.6\overset{5}{\cancel{0}}\overset{9}{0} \\ -1.375 \\ \hline +4.225 \end{array}$$