

## 2.3 Problem Solving with Rational Numbers in Fraction Form

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### Adding/Subtracting

Ex #1

$$\begin{aligned} & -\frac{2}{3} + \frac{1}{6} \\ & = -\frac{4}{6} + \frac{1}{6} = \frac{-4+1}{6} \\ & = \frac{-3}{6} \\ & = \boxed{-\frac{1}{2}} \end{aligned}$$

STEP 1 First lowest

common denominator

STEP 2 Multiply both top and bottom

STEP 3 Add numerators

STEP 4 REDUCE"

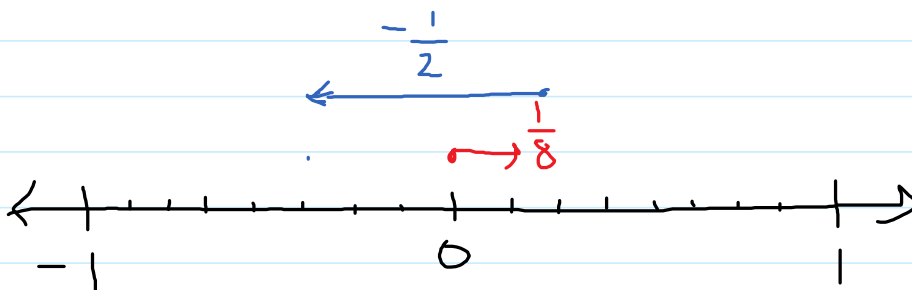
Ex #2

$$-3\frac{1}{3} + 2\frac{5}{6}$$

\* change to improper fractions

$$= -\frac{10}{3} + \frac{17}{6} = \frac{-20+17}{6} = -\frac{3}{6} = \boxed{-\frac{1}{2}}$$

Ex #3 Write the addition/subtraction statement and solve



$$\frac{1}{8} + \left(-\frac{1}{2}\right) = -\frac{3}{8}$$

$$\frac{1}{8} - \frac{1}{2} = -\frac{3}{8}$$

## Multiplication / Division

Ex #4

$$\begin{aligned} \frac{5}{6} \times \frac{3}{2} &= \frac{15}{12} \\ &= \frac{5}{4} \\ &= \boxed{1\frac{1}{4}} \end{aligned}$$

STEP 1 Multiply straight across  
STEP 2 Reduce  
STEP 3 Change to proper/mixed fraction

Ex #5

$$2\frac{2}{3} \times \left(-1\frac{3}{4}\right)$$

$$= \frac{8}{3} \times \left(-\frac{7}{4}\right) = -\frac{56}{12} = -\frac{14}{3} = \boxed{-4\frac{2}{3}}$$

Ex #6

$$\frac{3}{2} - \left(-\frac{1}{5}\right)$$

$$= \frac{3}{2} \times \left(-\frac{5}{1}\right) = -\frac{15}{2} = \boxed{-7\frac{1}{2}}$$

change to a multiplication  
reciprocal (flip it)

Ex #7

$$-4\frac{2}{3} - 1\frac{4}{5}$$

$$= -\frac{14}{3} - \frac{9}{5} = -\frac{14}{3} \times \frac{5}{9} = -\frac{70}{27} = \boxed{-2\frac{16}{27}}$$

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