Section 3.3: Subtracting Rational Numbers

Recall: Subtract the following integers:

$(-3) - (-5)$

$\therefore (-3) + (+5)$

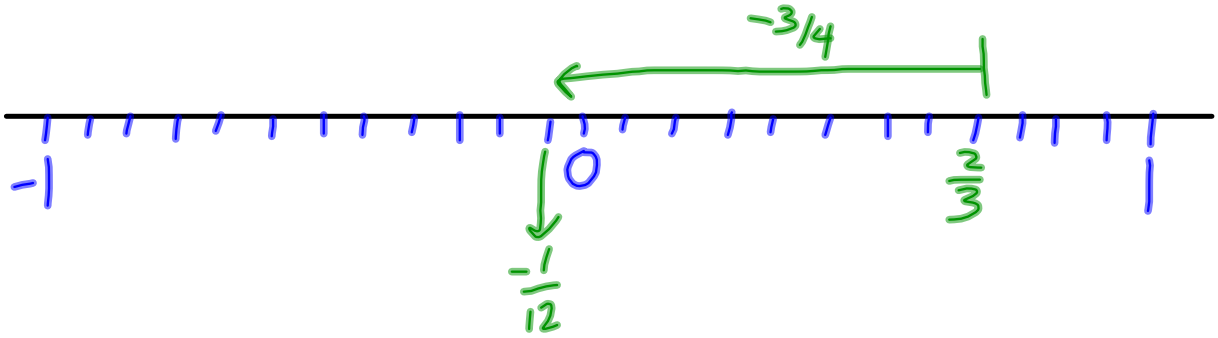
$+2$

* Change the subtraction sign to addition and use the opposite number for the 2nd Integer.

* The same process is followed using rational numbers instead of integers.

Ex #1: Determine each difference:

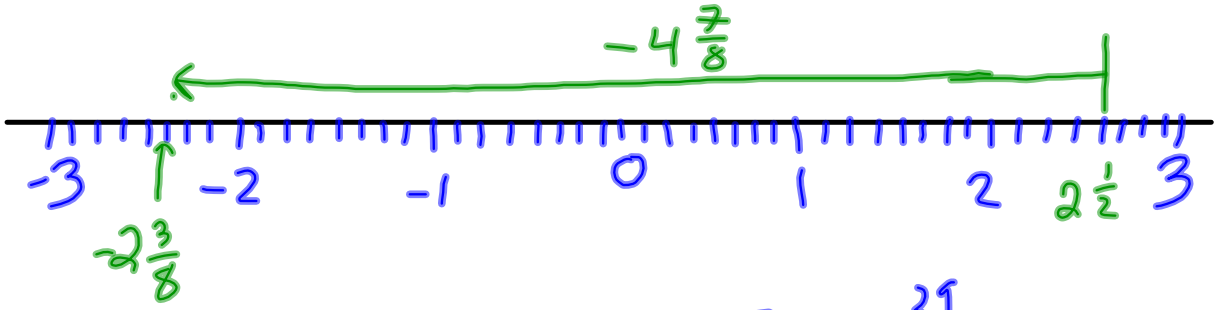
(A) $\frac{2}{3} - \frac{3}{4} = \frac{2}{3} + \left(\frac{-3}{4}\right)$



$\frac{2}{3} = \frac{8}{12}$ $\frac{-3}{4} = \frac{-9}{12}$

$\frac{2}{3} - \frac{3}{4} = \frac{-1}{12}$

(B) $2\frac{1}{2} - 4\frac{7}{8} = 2\frac{1}{2} + \left(-4\frac{7}{8}\right)$



$2\frac{1}{2} = 2\frac{4}{8}$ $\quad -4\frac{7}{8} = -\frac{39}{8}$

$\therefore 2\frac{1}{2} - 4\frac{7}{8} = -2\frac{3}{8}$

(c) $-3\frac{1}{3} - 2\frac{5}{6} = -3\frac{1}{3} + \left(-2\frac{5}{6}\right)$

$= \frac{-10}{3} + \left(\frac{-17}{6}\right)$

$= \frac{-20}{6} + \left(\frac{-17}{6}\right)$

$= \frac{-37}{6} = -6\frac{1}{6}$

(d) $2\frac{1}{4} - 3\frac{2}{3} - 1\frac{5}{6}$

Ans) $2\frac{1}{4} + \left(-3\frac{2}{3}\right) + \left(-1\frac{5}{6}\right)$

$= \frac{9}{4} + \left(\frac{-11}{3}\right) + \left(\frac{-11}{6}\right)$

$= \frac{27}{12} + \left(\frac{-44}{12}\right) + \left(\frac{-22}{12}\right) = \frac{-39}{12} = -3\frac{3}{12}$

$= -3\frac{1}{4}$

Homework:
pg 119-120
#9, 13