

Chapter 2: Rational Numbers p. 42

Rational Number: A number that can be written as a fraction $\frac{a}{b}$

Is zero a rational number? yes $\frac{0}{5}$ $\frac{0}{7}$ $\frac{0}{12}$

What is $\frac{5}{0}$? undefined (can't divide by 0)
not rational

2.2 Addition of Fractions p. 52 w/ negatives

- * decide whether you are going to add or subtract according to the rules of addition (song)
- * if adding \rightarrow rewrite vertically (order doesn't matter)
if subtracting \rightarrow rewrite vertically w/ number of higher absolute value on top
- * make equivalent fractions using the least common denominator (LCD)
- * add or subtract the numerators (borrow if necessary)
- * denominator stays the same
- * simplify $\left\{ \begin{array}{l} \text{reduce} \\ \text{turn improper fraction back to a mixed number} \end{array} \right.$

$$\begin{array}{r} 1) \quad 14\frac{1}{2} + (-18\frac{1}{6}) \\ 18\frac{1}{6} = 18\frac{1}{6} \times 7 \\ -14\frac{1}{2} = 14\frac{3}{6} \\ \hline -3\frac{4}{6} \end{array}$$

$$\boxed{-3\frac{2}{3}}$$

$$\begin{array}{r} 2) \quad -3\frac{7}{8} + 10 \\ 10 = 10\frac{8}{8} \\ -3\frac{7}{8} \\ \hline 6\frac{1}{8} \end{array}$$

$$\boxed{6\frac{1}{8}}$$

$$\begin{array}{r} 3) \quad 2\frac{2}{3} + (-1\frac{3}{4}) \\ 2\frac{2}{3} = 2\frac{8}{12} \\ -1\frac{3}{4} = -1\frac{9}{12} \\ \hline 1\frac{11}{12} \end{array}$$

$$\boxed{1\frac{11}{12}}$$

$$1) -\frac{1}{3} + \frac{1}{6} = \boxed{-\frac{1}{6}}$$

$$-\frac{1}{3} = -\frac{2}{6}$$

$$+\frac{1}{6} = +\frac{1}{6}$$

$$\hline -\frac{1}{6}$$

$$2) -\frac{8}{3} + \frac{5}{6} = \boxed{-1\frac{5}{6}}$$

$$-\frac{8}{3} = -\frac{16}{6}$$

$$+\frac{5}{6} = \frac{5}{6}$$

$$\hline -\frac{11}{6} = -1\frac{5}{6}$$

$$3) -\frac{7}{8} + \frac{1}{4} = \boxed{-\frac{5}{8}}$$

$$-\frac{7}{8} = -\frac{7}{8}$$

$$+\frac{1}{4} = \frac{2}{8}$$

$$\hline -\frac{5}{8}$$

$$4) -6\frac{1}{3} + \left(-\frac{2}{5}\right) = \boxed{-6\frac{11}{15}}$$

$$-6\frac{1}{3} = -6\frac{5}{15}$$

$$-\frac{2}{5} = -\frac{6}{15}$$

$$\hline -6\frac{11}{15}$$

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

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

$$+2$$

$$\hline -1\frac{1}{2}$$

$$6) \frac{5}{8} + \left(-\frac{3}{16}\right) = \boxed{\frac{7}{16}}$$

$$\frac{5}{8} = \frac{10}{16}$$

$$+\left(-\frac{3}{16}\right) = -\frac{3}{16}$$

$$\hline \frac{7}{16}$$