6.2 Adding/Subtracting Fractions (Rational Numbers)

Properties for Rational Numbers with Addition

1. Closure

2. Commutativity

3. Associativity

4. Additive Identity

5. Additive Inverse

To add fractions with like denominators:

$$\frac{a}{b}+\frac{c}{b}=\frac{a+c}{b}$$

To add fractions with unlike denominators:

$$\frac{a}{b}+\frac{c}{d}=\frac{ad+bc}{bd}$$

Addition/Subtraction Models

1. Pie chart (circle)

2. Number line

3. Fraction Strip

4. Rectagular Cake

Examples:

1. $\frac{1}{4}+\frac{1}{6}$

2. $\frac{2}{5}+\frac{3}{7}$

3. $\frac{2}{3}-\frac{3}{7}$

4. $\frac{7}{12}-\frac{5}{18}$

5. $3\frac{5}{8}-2\frac{5}{6}$

6. $15\frac{1}{4}+17\frac{3}{5}$

7. Estimate:

$3\frac{1}{6}+8\frac{2}{3}+5\frac{1}{4}$

A student added $\frac{3}{4}+\frac{1}{2}$ and obtained $\frac{4}{6}$.

How would you use estimation to show that this answer cannot be correct?