

Unit 1: Review – Integers & Rationals [NO CALCULATORS]**1.4 Rationals: Adding & Subtracting**

To add or subtract we must have a common denominator. To make calculations the simplest use the LOWEST common denominator (LCD).

Ex. Evaluate:

a) $\frac{1}{2} + \frac{3}{2}$

$$= \frac{4}{2}$$

$$= \boxed{2}$$

b) $\frac{5}{3} - \frac{1}{3}$

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

$$= \boxed{1\frac{1}{3}}$$

c) $\frac{1}{2} + \frac{2}{3}$

$$= \frac{3}{6} + \frac{4}{6}$$

$$= \frac{7}{6}$$

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

d) $\frac{5}{8} - \frac{1}{6}$

$$= \frac{15}{24} - \frac{4}{24}$$

$$= \boxed{\frac{11}{24}}$$

What about mixed numbers?

We can + or - in mixed number form or improper form

Ex. Evaluate:

a) $3\frac{1}{4} + 2\frac{2}{5}$

Mixed Numbers

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

$$5 + \frac{5}{20} + \frac{8}{20}$$

$$= \boxed{5\frac{13}{20}}$$

Improper

$$\frac{13}{4} + \frac{12}{5}$$

$$\frac{65}{20} + \frac{48}{20}$$

$$= \boxed{\frac{113}{20}}$$

b) $6\frac{1}{2} - 5\frac{1}{3}$

Mixed Numbers

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

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

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

Improper

$$\frac{13}{2} - \frac{16}{3}$$

$$\frac{39}{6} - \frac{32}{6}$$

$$= \boxed{\frac{7}{6}}$$

c) $1\frac{3}{4} - 2 + 3\frac{1}{6}$

$$= 1 - 2 + 3 + \frac{3}{4} + \frac{1}{6}$$

$$= 2 + \frac{9}{12} + \frac{2}{12}$$

$$= \boxed{2\frac{11}{12}}$$

When using mixed numbers be sure that your answers are in **PROPER** mixed number form.

Ex. Evaluate:

a) $2\frac{2}{3} + 3\frac{1}{2}$

$$= 2 + 3 \quad \frac{2}{3} + \frac{1}{2}$$

$$= 5 \quad \frac{4}{6} + \frac{3}{6}$$

$$= 5 \quad \frac{7}{6} \quad \left. \begin{array}{l} \text{improper} \\ \text{inside} \\ \text{a mixed \#} \end{array} \right\} \quad \times$$

$$= 5 + 1\frac{1}{6}$$

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

b) $3\frac{1}{3} - 1\frac{4}{5}$

$$= 3 - 1 \quad \frac{1}{3} - \frac{4}{5}$$

$$= 2 \quad \frac{5}{15} - \frac{12}{15}$$

$$= 2 \quad \frac{-7}{15} \quad \left. \begin{array}{l} \text{negative on} \\ \text{the fraction} \\ \text{part of mixed} \\ \text{\#} \end{array} \right\} \quad \times$$

$$2 \quad \frac{-7}{15}$$

$$1 + 1 \quad \frac{-7}{15}$$

$$1 \quad \frac{15}{15} - \frac{7}{15}$$

$$\boxed{1 \quad \frac{8}{15}}$$

$$\frac{2}{1} - \frac{7}{15}$$

$$\frac{30}{15} - \frac{7}{15}$$

$$\boxed{\frac{23}{15}}$$