Mathematics9 Date _____

Unit 1: Review – Integers & Rationals [NO CALCULATORS]

1.4 Rationals: Adding & Subtracting

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

Ex. Evaluate:

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

$= \frac{4}{2}$

$= 2$

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

$= \frac{4}{3}$

OR $1\frac{1}{3}$

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

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

$= 7/6$

OR $1\frac{1}{6}$

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

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

$= \frac{11}{24}$

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

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

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

$= 5\ 13/20$

Impropers

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

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

$\frac{113}{20}$

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

Mixed Numbers

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

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

$= 1\ 1/6$

Impropers

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

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

$= 7/6$

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

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

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

$= 2\ 11/12$

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

Ex. Evaluate:

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

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

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

$= 5\ \frac{7}{6}$] improper inside a mixed ✗

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

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

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

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

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

$= 2\ \frac{-7}{15}$ negative on the fraction part of mixed ✗

$= \frac{2}{1} - \frac{7}{15}$ OR $\frac{2\cdot 15 + (-7)}{15}$

$= \frac{30}{15} - \frac{7}{15}$ $= \frac{30+(-7)}{15}$

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

OR

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

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

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

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

Practice: Worksheets – on sheet or separate but **MUST SHOW LCD** step