

July 2, 2015

③ Addition w/ Like Denominators

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

Common to both fractions

$$\frac{3}{5} - \frac{2}{5} = \frac{3-2}{5} = \frac{1}{5}$$

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④ Addition (Subtraction) with Unlike Denominators

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

$bd \leftarrow$ Common Denominator

TPZ $\rightarrow \frac{a}{b} \cdot \frac{c}{c} = \frac{ac}{bc}$

$$\frac{a}{b} \cdot \frac{d}{d} = \frac{ad}{bd} \leftarrow$$
 Common denominator
"one"

$$\frac{c}{d} \cdot \frac{b}{b} = \frac{bc}{bd} \leftarrow$$
 same Common denominator
$$\frac{ad}{bd} \pm \frac{bc}{bd} = \frac{ad \pm bc}{bd}$$

Common Denominator ("like!")
i.e. ③

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$$\frac{5}{7} + \frac{1}{2} = \frac{5 \cdot 2 + 1 \cdot 7}{7 \cdot 2}$$

Common Denominator

Unlike Denominators

$$= \frac{10 + 7}{14}$$

$$= \frac{17}{14}$$

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$$\frac{3}{4} + \frac{11}{12} = \frac{3 \cdot 3 + 11}{12}$$

$$= \frac{9 + 11}{12}$$

$$= \frac{20}{12}$$

$$= \frac{5}{3}$$

LCM = 12

4 = 2 · 2
12 = 2 · 2 · 3

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$$\frac{7}{9} - \frac{3}{5} = \frac{7 \cdot 5 - 3 \cdot 9}{9 \cdot 5 = 45}$$

$$= \frac{35 - 27}{45}$$

$$= \frac{8}{45}$$

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

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

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

$$\frac{3}{6} + \frac{2}{6} = \frac{3+2}{6} = \frac{5}{6}$$

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$$\frac{12}{23} - \frac{1}{8} = \frac{12 \cdot 8 - 1 \cdot 23}{23 \cdot 8 = 184}$$

$$= \frac{96 - 23}{184}$$

$$= \frac{73}{184}$$

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$$-\frac{5}{6} + \frac{4}{9} = \frac{-5 + 24}{6}$$

$$-\frac{8}{9} - \frac{1}{9} = \frac{-72 - 1}{9}$$

$$= \frac{19}{6} \text{ K}$$

$$-\frac{73}{9} \text{ F}$$

$$= \frac{19}{6} \cdot \frac{3}{3} = \frac{57}{18}$$

$$= -\frac{57}{146}$$

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$$\left[\frac{1}{2} - \frac{1}{3}\right] + \frac{1}{4} - \frac{1}{5} + \frac{1}{6}$$

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

$$\frac{2+3}{12} - \frac{1}{5} + \frac{1}{6}$$

$$\left[\frac{5}{12} - \frac{1}{5}\right] + \frac{1}{6}$$

$$\frac{25-12}{60} + \frac{1}{6}$$

$$\left[\frac{13}{60} + \frac{1}{6}\right]$$

$$\frac{13+10}{60}$$

$$\frac{23}{60}$$

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LCD = 60

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

$$\frac{30 - 20 + 15 - 12 + 10}{60}$$

$$\frac{23}{60}$$

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A Proper Fraction

- Is when the numerator is less than the denominator

$$\frac{3}{4} \rightarrow 3 < 4$$

An Improper Fraction

- Is when the numerator is greater than the denominator.

$$\frac{4}{3} \rightarrow 4 > 3$$

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Converting Improper fractions to mixed fractions

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

-3
1 ← remainder

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

↑ whole 1/3 of a whole

Converting mixed to improper

$$1 \frac{1}{3} = \frac{1 \cdot 3 + 1}{3} = \frac{3+1}{3} = \frac{4}{3}$$

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$$\frac{19}{4} = 4 \frac{\frac{19}{4} - 16}{4} = 4 \frac{3}{4}$$

$$// \frac{5}{6} = \frac{11 \cdot 6 + 5}{6} = \frac{66 + 5}{6} = \frac{71}{6}$$

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Converting a fraction into its decimal representation.

$$\frac{3}{4} = 4 \overline{) 3.00}$$

0.75
 $3 \cdot 0 = 0$
 -28
 20
 -20
 $0 \leftarrow \text{remainder}$

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