Math 105 Skill Builder #F - 16
Adding or Subtracting Fractions with Different Denominators -
Denominators are Relatively Prime

Step1 Find the LCM of the denominators of the fractions.

Step2 Write each fraction as an equivalent fraction whose denominator is the LCD. Multiply

each fraction by $\dfrac{a}{a}$ where a is the missing factor in that fractions denominator.

Step3 Add or subtract the like fractions.

Add: $\dfrac{2}{5} + \dfrac{4}{9} = \dfrac{2}{5} \cdot \dfrac{9}{9} + \dfrac{4}{9} \cdot \dfrac{5}{5}$

$$= \dfrac{18}{45} + \dfrac{20}{45}$$

$$= \dfrac{38}{45}$$

Subtract: $\dfrac{5}{7} - \dfrac{1}{8} = \dfrac{5}{7} \cdot \dfrac{8}{8} - \dfrac{1}{8} \cdot \dfrac{7}{7}$

$$= \dfrac{40}{56} - \dfrac{7}{56}$$

$$= \dfrac{33}{56}$$

Examples:

Adding and Subtracting Fractions
$\dfrac{2}{3} + \dfrac{3}{8} = \dfrac{2}{3} \cdot \dfrac{8}{8} + \dfrac{3}{8} \cdot \dfrac{3}{3} = \dfrac{16}{24} + \dfrac{9}{24} = \dfrac{25}{24}$
$\dfrac{1}{6} + \dfrac{3}{5} = \dfrac{1}{6} \cdot \dfrac{5}{5} + \dfrac{3}{5} \cdot \dfrac{6}{6} = \dfrac{5}{30} + \dfrac{18}{30} = \dfrac{23}{30}$
$\dfrac{9}{10} - \dfrac{3}{7} = \dfrac{9}{10} \cdot \dfrac{7}{7} - \dfrac{3}{7} \cdot \dfrac{10}{10} = \dfrac{63}{70} - \dfrac{30}{70} = \dfrac{33}{70}$

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Perform the indicated operation:

1) $\dfrac{2}{5} + \dfrac{2}{3}$	4) $\dfrac{10}{11} - \dfrac{1}{3}$
2) $\dfrac{5}{14} + \dfrac{1}{5}$	5) $\dfrac{11}{12} - \dfrac{2}{7}$
3) $\dfrac{2}{7} + \dfrac{7}{11}$	6) $\dfrac{7}{8} - \dfrac{2}{9}$

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Answers:

1) $\dfrac{16}{15}$

2) $\dfrac{39}{70}$

3) $\dfrac{71}{77}$

4) $\dfrac{19}{33}$

5) $\dfrac{53}{84}$

6) $\dfrac{47}{72}$

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