Adding Fractions Practice

Name: _____ Date: _____

Question 1

Add the fractions and simplify the final result if possible

I. $\frac{2}{5} + \frac{9}{10} =$

II. $\frac{2}{4} + \frac{6}{8} =$

III. $\frac{1}{8} + \frac{3}{8} =$

IV. $\frac{5}{32} + \frac{4}{24} =$

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V. $\frac{5}{35} + \frac{5}{15} =$

VI. $\frac{106}{18} + \frac{98}{27} =$

VII. $\frac{7}{7} + \frac{4}{7} =$

VIII. $\frac{6}{7} + \frac{7}{8} =$

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Question 2

Add the fractions and simplify the final result if possible
(prime factorization will be required to find the least common denominator)
(long division will be required to determine the amount to multiply each fraction by)

I. $\frac{18}{32} + \frac{41}{61} =$

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ll. $\frac{7}{84} + \frac{51}{104} =$

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III. $\frac{32}{26} + \frac{1}{28} =$

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Name: **Key** Date: _____

Question 1

Add the fractions and simplify the final result if possible

I. $\frac{2}{5} + \frac{9}{10} = \frac{13}{10}$

$5: \overset{x1}{5}, \overset{x2}{10}$

$10: \overset{x1}{10}$

LCM: 10

$\frac{2}{2} \cdot \frac{2}{5} + \frac{9}{10} \cdot \frac{1}{1} = \frac{4}{10} + \frac{9}{10} = \frac{13}{10}$ OR $1\frac{3}{10}$

II. $\frac{2}{4} + \frac{6}{8} = \frac{5}{4}$

$4: \overset{x1}{4}, \overset{x2}{8}$

$8: \overset{x1}{8}$

LCM: 8

$\frac{2}{2} \cdot \frac{2}{4} + \frac{6}{8} \cdot \frac{1}{1} = \frac{4}{8} + \frac{6}{8} = \frac{10}{8} \xrightarrow{\text{Simplify}} \frac{5}{4}$ OR $1\frac{1}{4}$

III. $\frac{1}{8} + \frac{3}{8} = \frac{1}{2}$

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} \xrightarrow{\text{Simplify}} \frac{1}{2}$

IV. $\frac{5}{32} + \frac{4}{24} = \frac{31}{96}$

$24: \overset{x1}{24}, \overset{x2}{48}, \overset{x3}{72}, \overset{x4}{96}$

$32: \overset{x1}{32}, \overset{x2}{64}, \overset{x3}{96}$

LCM: 96

$\frac{3}{3} \cdot \frac{5}{32} + \frac{4}{24} \cdot \frac{4}{4} = \frac{15}{96} + \frac{16}{96} = \frac{31}{96}$

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V. $\frac{5}{35} + \frac{5}{15} = \frac{10}{21}$

$15: \overset{x1}{15}, \overset{x2}{30}, \overset{x3}{45}, \overset{x4}{60}, \overset{x5}{75}, \overset{x6}{90}, \overset{x7}{105}$

$35: \overset{x1}{35}, \overset{x2}{70}, \overset{x3}{105}$

LCM: 105

$$\frac{3}{3} \cdot \frac{5}{35} + \frac{5}{15} \cdot \frac{7}{7} = \frac{15}{105} + \frac{35}{105} = \frac{50}{105} \xrightarrow{\text{Simplify}} \frac{10}{21}$$

VI. $\frac{106}{18} + \frac{98}{27} = \frac{257}{27}$

$18: \overset{x1}{18}, \overset{x2}{36}, \overset{x3}{54}$

$27: \overset{x1}{27}, \overset{x2}{54}$

LCM: 54

$$\frac{3}{3} \cdot \frac{106}{18} + \frac{98}{27} \cdot \frac{2}{2} = \frac{318}{54} + \frac{196}{54} = \frac{514}{54} \xrightarrow{\text{Simplify}} \frac{257}{27} \text{ OR } 9\frac{14}{27}$$

VII. $\frac{7}{7} + \frac{4}{7} = \frac{11}{7}$

$$\frac{7}{7} + \frac{4}{7} = \frac{11}{7} \text{ OR } 1\frac{4}{7}$$

VIII. $\frac{6}{7} + \frac{7}{8} = \frac{97}{56}$

$7: \overset{x1}{7}, \overset{x2}{14}, \overset{x3}{21}, \overset{x4}{28}, \overset{x5}{35}, \overset{x6}{42}, \overset{x7}{49}, \overset{x8}{56}$

$8: \overset{x1}{8}, \overset{x2}{16}, \overset{x3}{24}, \overset{x4}{32}, \overset{x5}{40}, \overset{x6}{48}, \overset{x7}{56}$

LCM: 56

$$\frac{8}{8} \cdot \frac{6}{7} + \frac{7}{8} \cdot \frac{7}{7} = \frac{48}{56} + \frac{49}{56} = \frac{97}{56} \text{ OR } 1\frac{41}{56}$$

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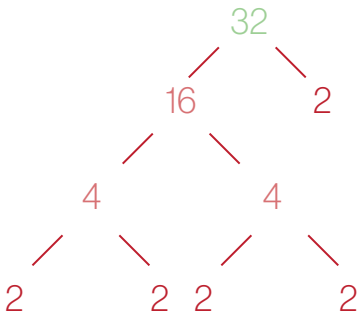
Question 2

Add the fractions and simplify the final result if possible
(prime factorization will be required to find the least common denominator)
(long division will be required to determine the amount to multiply each fraction by)

I. $\frac{18}{32} + \frac{41}{61} = \frac{1,205}{976}$

prime number

61



Prime Factorizartion 32 : $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \longrightarrow 2^5 \longrightarrow 2^5$

Prime Factorizartion 61 : $61 \longrightarrow 61 \longrightarrow 61$

LCM : $2^5 \cdot 61 = 1,952$

$$\begin{array}{r} 0061. \\ 32\overline{)1,952.} \\ -192\downarrow \\ \hline 32 \\ -\ 32 \\ \hline 0 \end{array} \qquad \begin{array}{r} 0032. \\ 61\overline{)1,952.} \\ -183\downarrow \\ \hline 122 \\ -122 \\ \hline 0 \end{array}$$

$$\frac{61}{61} \cdot \frac{18}{32} + \frac{41}{61} \cdot \frac{32}{32} = \frac{1,098}{1,952} + \frac{1,312}{1,952} = \frac{2,410}{1,952} \xrightarrow{\text{Simplify}} \frac{1,205}{976} \text{ OR } 1\frac{229}{976}$$

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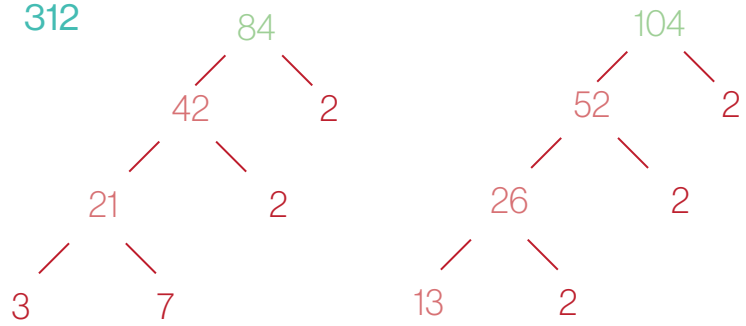
II. $\frac{7}{84} + \frac{51}{104} = \frac{179}{312}$



Prime Factorizartion $84: 2 \cdot 2 \cdot 3 \cdot 7 \longrightarrow 2^2 \cdot 3 \cdot 7 \longrightarrow 2^2 \cdot 3 \cdot 7$

Prime Factorizartion $104: 2 \cdot 2 \cdot 2 \cdot 13 \longrightarrow 2^3 \cdot 13 \longrightarrow 2^3 \cdot 13$

LCM: $2^3 \cdot 3 \cdot 7 \cdot 13 = 2{,}184$

$$\begin{array}{r} 0026. \\ 84\overline{)2{,}184.} \\ -168\downarrow \\ \hline 504 \\ -\ 504 \\ \hline 0 \end{array} \qquad \begin{array}{r} 0021. \\ 104\overline{)2{,}184.} \\ -208\downarrow \\ \hline 104 \\ -104 \\ \hline 0 \end{array}$$

$$\frac{26}{26} \cdot \frac{7}{84} + \frac{51}{104} \cdot \frac{21}{21} = \frac{182}{2{,}184} + \frac{1{,}071}{2{,}184} = \frac{1{,}253}{2{,}184} \xrightarrow{\text{Simplify}} \frac{179}{312}$$

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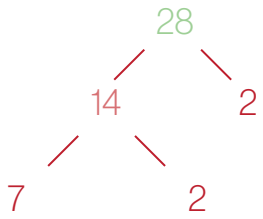
III. $\frac{32}{26} + \frac{1}{28} = \frac{461}{364}$



Prime Factorizartion $26: 2 \cdot 13 \longrightarrow 2 \cdot 13 \longrightarrow 2 \cdot 13$

Prime Factorizartion $28: 2 \cdot 2 \cdot 7 \longrightarrow 2^2 \cdot 7 \longrightarrow 2^2 \cdot 7$

LCM: $2^2 \cdot 7 \cdot 13 = 364$

$$\begin{array}{r} 014. \\ 26\overline{)364.} \\ -26\downarrow \\ \hline 104 \\ -104 \\ \hline 0 \end{array} \qquad \begin{array}{r} 013. \\ 28\overline{)364.} \\ -28\downarrow \\ \hline 84 \\ -84 \\ \hline 0 \end{array}$$

$$\frac{14}{14} \cdot \frac{32}{26} + \frac{1}{28} \cdot \frac{13}{13} = \frac{448}{364} + \frac{13}{364} = \frac{461}{364} \quad \text{OR} \quad 1\,\frac{97}{364}$$