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- 66.
- $\frac{12}{7}$ de 420 = $\frac{12 \cdot 420}{7} = 720$
 - $\frac{15}{18}$ de 243 = $\frac{15 \cdot 243}{18} = 202,5$
 - $\frac{6}{35}$ de 2464 = $\frac{6 \cdot 2464}{35} = 422,4$
 - $\frac{23}{36}$ de 0,9 = $\frac{23 \cdot 0,9}{36} = 0,575$

69

a) $\frac{17}{20}, \frac{11}{24} \Rightarrow \frac{102}{120}, \frac{55}{120}$

m.c.m (20; 24) = $2^3 \cdot 3 \cdot 5 = 120$

$$\begin{array}{r|l} 20 & 2 \\ 10 & 2 \\ 5 & 5 \\ 1 & \\ \hline 20 & = 2^2 \cdot 5 \end{array} \quad \begin{array}{r|l} 24 & 2 \\ 12 & 2 \\ 6 & 2 \\ 3 & 3 \\ 1 & \\ \hline 24 & = 2^3 \cdot 3 \end{array}$$

b) $\frac{11}{48}, \frac{19}{54}, \frac{23}{60} \Rightarrow \frac{495}{2160}, \frac{760}{2160}, \frac{828}{2160}$

m.c.m (48; 54; 60) = $2^4 \cdot 3^3 \cdot 5 =$

$$\begin{array}{r|l} 48 & 2 \\ 24 & 2 \\ 12 & 2 \\ 6 & 2 \\ 3 & 3 \\ 1 & \\ \hline 48 & = 2^4 \cdot 3 \end{array} \quad \begin{array}{r|l} 54 & 2 \\ 27 & 3 \\ 9 & 3 \\ 3 & 3 \\ 1 & \\ \hline 54 & = 2 \cdot 3^3 \end{array} \quad \begin{array}{r|l} 60 & 2 \\ 30 & 2 \\ 15 & 3 \\ 5 & 5 \\ 1 & \\ \hline 60 & = 2^2 \cdot 3 \cdot 5 \end{array}$$

c) $\frac{3}{10}, \frac{4}{15}, \frac{7}{18}, \frac{9}{20} \Rightarrow \frac{54}{180}, \frac{48}{180}, \frac{70}{180}, \frac{81}{180}$

m.c.m (10, 15, 18; 20) = $2^2 \cdot 3^2 \cdot 5 = 180$

$$\begin{array}{r|l} 10 & 2 \\ 5 & 5 \\ 1 & \\ \hline 10 & = 2 \cdot 5 \end{array} \quad \begin{array}{r|l} 15 & 3 \\ 5 & 5 \\ 1 & \\ \hline 15 & = 3 \cdot 5 \end{array} \quad \begin{array}{r|l} 18 & 2 \\ 9 & 3 \\ 3 & 3 \\ 1 & \\ \hline 18 & = 2 \cdot 3^2 \end{array} \quad \begin{array}{r|l} 20 & 2 \\ 10 & 2 \\ 5 & 5 \\ 1 & \\ \hline 20 & = 2^2 \cdot 5 \end{array}$$

76. a) $\frac{23}{20}, \frac{45}{30}, \frac{18}{12}, \frac{5}{4} \Rightarrow \frac{69}{60}, \frac{90}{60}, \frac{90}{60}, \frac{75}{60} \Rightarrow \frac{90}{60} = \frac{90}{60} > \frac{75}{60} > \frac{69}{60}$

m.c.m (20, 30, 12, 4) = $2^2 \cdot 3 \cdot 5 = 60$

$$\begin{array}{r|l} 20 & 2 \\ 10 & 2 \\ 5 & 5 \\ 1 & \\ \hline 20 & = 2^2 \cdot 5 \end{array} \quad \begin{array}{r|l} 30 & 2 \\ 15 & 3 \\ 5 & 5 \\ 1 & \\ \hline 30 & = 2 \cdot 3 \cdot 5 \end{array} \quad \begin{array}{r|l} 12 & 2 \\ 6 & 2 \\ 3 & 3 \\ 1 & \\ \hline 12 & = 2^2 \cdot 3 \end{array} \quad \begin{array}{r|l} 4 & 2 \\ 2 & 2 \\ 1 & \\ \hline 4 & = 2^2 \end{array}$$

b) Comú denomin. = $20 \cdot 30 \cdot 12 \cdot 4 = 28.800$

$$\frac{33 \cdot 120}{28.800}, \frac{43 \cdot 200}{28.800}, \frac{43 \cdot 200}{28.800}, \frac{36 \cdot 000}{28.800} \Rightarrow \frac{43 \cdot 200}{28.800} = \frac{43 \cdot 200}{28.800} > \frac{36 \cdot 000}{28.800} > \frac{33 \cdot 120}{28.800}$$

c) $\frac{23}{20} = 1,15 \quad \frac{45}{30} = 1,5 \quad \frac{18}{12} = 1,5 \quad \frac{5}{4} = 1,25 \quad 1,5 = 1,5 > 1,25 > 1,15$

77. a) $\frac{16}{25} + \frac{18}{35} = \frac{112}{175} + \frac{90}{175} = \boxed{\frac{202}{175}}$ b) $\frac{28}{40} - \frac{7}{30} = \frac{84}{120} - \frac{28}{120} = \boxed{\frac{56}{120}}$

$25 \begin{array}{l} 5 \\ 5 \\ 1 \end{array} \quad 35 \begin{array}{l} 5 \\ 7 \\ 1 \end{array} \quad \text{m.c.m.} = 5^2 \cdot 7 = 175$
 $40 \begin{array}{l} 2 \\ 2 \\ 2 \\ 5 \\ 1 \end{array} \quad 30 \begin{array}{l} 2 \\ 3 \\ 5 \\ 1 \end{array} \quad \text{m.c.m.} = 2^3 \cdot 3 \cdot 5 = 120$
 $25 = 5^2 \quad 35 = 5 \cdot 7$
 $40 = 2^3 \cdot 5 \quad 30 = 2 \cdot 3 \cdot 5$

c) $\frac{17}{20} + \frac{8}{15} - \frac{7}{12} = \frac{51}{60} + \frac{32}{60} - \frac{35}{60} = \boxed{\frac{48}{60}}$

m.c.m. = $2^2 \cdot 3 \cdot 5 = 60$

$20 \begin{array}{l} 2 \\ 10 \\ 5 \\ 1 \end{array} \quad 15 \begin{array}{l} 3 \\ 5 \\ 1 \end{array} \quad 12 \begin{array}{l} 2 \\ 6 \\ 3 \\ 4 \end{array}$
 $20 = 2^2 \cdot 5 \quad 15 = 3 \cdot 5 \quad 12 = 2^2 \cdot 3$

d) $\frac{15}{28} - \frac{9}{14} + \frac{5}{21} - \frac{1}{6} = \frac{45}{84} - \frac{54}{84} + \frac{20}{84} - \frac{14}{84} = \boxed{\frac{-3}{84}}$

m.c.m. = $2^2 \cdot 7 \cdot 3 = 84$

$28 \begin{array}{l} 2 \\ 14 \\ 7 \\ 4 \end{array} \quad 14 \begin{array}{l} 2 \\ 7 \\ 1 \end{array} \quad 21 \begin{array}{l} 3 \\ 7 \\ 1 \end{array} \quad 6 \begin{array}{l} 2 \\ 3 \\ 1 \end{array}$
 $28 = 2^2 \cdot 7 \quad 14 = 2 \cdot 7 \quad 21 = 3 \cdot 7 \quad 6 = 2 \cdot 3$

78. a) $\frac{75}{18} \cdot \frac{27}{25} = \boxed{\frac{2025}{450}}$

b) $\frac{32}{70} \cdot \frac{63}{24} = \boxed{\frac{2016}{1680}}$

c) $\frac{8}{36} \cdot \frac{52}{40} = \boxed{\frac{320}{1872}}$

d) $\frac{35}{108} \cdot \frac{25}{81} = \boxed{\frac{2835}{2200}}$

85. a) $\frac{125}{100} = \frac{25}{20} = \boxed{\frac{5}{4}}$

b) $\frac{326}{10} = \frac{163}{5}$

c) $\frac{64}{1000} = \frac{16}{250}$

d) $\frac{9035}{10} = \frac{1807}{2}$