

$$\textcircled{1} \text{ a) } \frac{4}{5} \neq \frac{x}{35}$$

$$4 \cdot 35 = 5 \cdot x$$

$$140 = 5 \cdot x$$

$$\begin{array}{r} 140 \\ 40 \\ 0 \end{array} \begin{array}{l} | 5 \\ \hline 28 \end{array} \rightarrow \boxed{x=28}$$

$$\text{b) } \frac{12}{16} \neq \frac{3}{5}$$

$$12 \cdot 5 = 16 \cdot 3$$

$$60 \neq 48$$

No son equivalentes.

$$12:16 = 3/4 = 0,75$$

$$3:5 = 0,6$$

$$\textcircled{2} \text{ a) } \frac{3}{10}, \frac{10}{10}, \frac{5}{10}, \frac{1}{10}$$

$$\frac{1}{10} < \frac{3}{10} < \frac{5}{10} < \frac{10}{10}$$

$$\text{b) } \frac{9}{4}, \frac{9}{3}, \frac{9}{9}, \frac{9}{20}$$

$$\frac{9}{3} > \frac{9}{4} > \frac{9}{9} > \frac{9}{20}$$

$$\text{c) } \frac{1}{3}, \frac{5}{6}, \frac{7}{15}, \frac{2}{10}$$

$$\frac{10}{30}, \frac{25}{30}, \frac{14}{30}, \frac{6}{30}$$

$$\frac{25}{30} > \frac{14}{30} > \frac{10}{30} > \frac{6}{30} *$$

$$\frac{5}{6} > \frac{7}{15} > \frac{1}{3} > \frac{2}{10} \leftarrow \text{Solución}$$

③ a) $10 : \frac{5}{6} = \frac{10 \cdot 6}{5} = \frac{60}{5} = 12$ $\rightarrow \frac{10 \cdot 6}{5} = 2 \cdot 6 = 12$

b) $\frac{5}{7} \cdot \frac{2}{5} = \frac{10}{35} = \frac{2}{7}$ $\rightarrow \frac{\cancel{5} \cdot 2}{7 \cdot \cancel{5}} = \frac{2}{7}$

c) $\frac{3}{4} + \frac{5}{20} - 1 = \frac{15}{20} + \frac{5}{20} - \frac{20}{20} = \frac{0}{20} = 0$

$$d) \frac{1}{4} + \frac{5}{12} + 3 = \frac{3}{12} + \frac{5}{12} + \frac{36}{12} = \frac{44}{12} = \frac{11}{3}$$

$$e) \frac{3}{5} \text{ de } 120 = \frac{3}{5} \cdot 120 = \frac{3 \cdot 120}{5} \begin{cases} \frac{360}{5} = 72 \\ 3 \cdot 24 = 72 \end{cases}$$

$$f) \left(\frac{2}{5}\right)^3 \cdot \left(\frac{2}{3} : \frac{2}{5}\right)^2 = \left(\frac{2}{5}\right)^3 \cdot \left(\frac{10}{6}\right)^2 = \frac{2^3}{5^3} \cdot \left(\frac{5}{3}\right)^2 = \frac{2^3}{5^{\cancel{3}^1}} \cdot \frac{\cancel{5}^2}{3^2} = \frac{2^3}{5^1 \cdot 3^2} = \frac{8}{45}$$

Simplificar fracciones con potencias

$$\frac{a^5}{a^3} = \frac{a \cdot a \cdot \cancel{a} \cdot \cancel{a} \cdot \cancel{a}}{\cancel{a} \cdot \cancel{a} \cdot \cancel{a}} = a^2$$

$$a^5 : a^3 = a^{5-3} = a^2$$

Ejemplo:

$$\left(\frac{3}{2}\right)^4 \cdot \left(\frac{2}{5}\right)^3 = \frac{3^4}{2^4} \cdot \frac{2^3}{5^3} = \frac{3^4 \cdot \cancel{2} \cdot \cancel{2} \cdot \cancel{2}}{\cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 2 \cdot 5^3} = \frac{3^4}{2 \cdot 5^3} = \frac{81}{2 \cdot 125} = \frac{81}{250}$$

$$\rightarrow = \frac{81 \cdot 8}{16 \cdot 125} = \frac{648}{2000} = \frac{324}{1000} = \frac{162}{500} = \frac{81}{250}$$

$$\textcircled{4} \text{ a) } 2 + \frac{1}{4} : \left(\frac{3}{4} - \frac{1}{12} \right) = 2 + \frac{1}{4} : \left(\frac{9}{12} - \frac{1}{12} \right) = 2 + \frac{1}{4} : \frac{8}{12}$$

$\frac{8}{12} \xrightarrow{\div 4} \frac{2}{3}$

$$= 2 + \frac{1 \cdot 12}{4 \cdot 8} = 2 + \frac{12}{32} = \frac{64}{32} + \frac{12}{32} = \frac{76}{32} = \frac{38}{16} = \frac{19}{8}$$

$$\text{b) } \frac{3}{4} - \frac{1}{3} - \frac{2}{12} + \frac{5}{6} = \frac{9}{12} - \frac{4}{12} - \frac{2}{12} + \frac{10}{12} = \frac{13}{12}$$

$\frac{13}{12} \xrightarrow{\div 4} \frac{13}{48}$

$$\textcircled{4} \quad c) \left[\frac{3}{4} - 2 \cdot \left(1 - \frac{7}{8} \right) \right] = \left[\frac{3}{4} - 2 \cdot \frac{1}{8} \right] = \left[\frac{3}{4} - \frac{2}{8} \right] = \frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$$

$$\begin{aligned} d) \frac{1}{2} : \left[\frac{1}{3} - 2 \cdot \left(1 - \frac{3}{4} \right) \right] &= \frac{1}{2} : \left[\frac{1}{3} - 2 \cdot \frac{1}{4} \right] = \frac{1}{2} : \left[\frac{1}{3} - \frac{2}{4} \right] = \frac{1}{2} : \left[\frac{4}{12} - \frac{6}{12} \right] = \\ &= \frac{1}{2} : \left[-\frac{2}{12} \right] = -\frac{1 \cdot 12}{2 \cdot 2} = -\frac{12}{4} = -3 \end{aligned}$$