

SOLUCIONES

① a) $\frac{3}{4}$ y $\frac{30}{40}$ $\begin{cases} 3 \cdot 40 = 120 \\ 4 \cdot 30 = 120 \end{cases} \Rightarrow$ Sí son equivalentes

b) $\frac{51}{39}$ y $\frac{17}{13}$ $\begin{cases} 51 \cdot 13 = 663 \\ 39 \cdot 17 = 663 \end{cases} \Rightarrow$ Sí son equivalentes

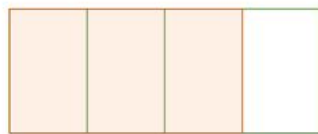
c) $\frac{31}{29}$ y $\frac{33}{86}$ $\begin{cases} 31 \cdot 86 = 2666 \\ 29 \cdot 33 = 957 \end{cases} \Rightarrow$ No son equivalentes

② La fracción representada es: $\frac{2}{20}$ o $\frac{1}{10}$

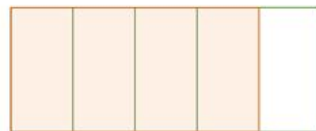
Fracciones equivalentes: $\frac{2}{20} = \frac{4}{40} = \frac{8}{80} = \frac{16}{160}$

$\frac{1}{10} = \frac{2}{20} = \frac{4}{40} = \frac{8}{80}$

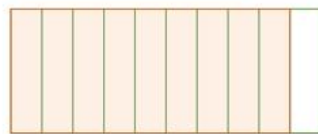
③



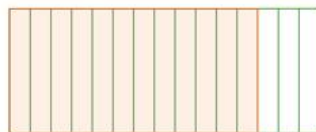
$\frac{3}{4}$



$\frac{4}{5}$



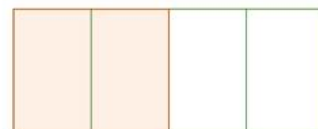
$\frac{9}{10}$



$\frac{12}{15}$

No son equivalentes

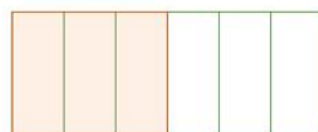
Sí son equivalentes



$\frac{2}{4}$



$\frac{3}{8}$



$\frac{3}{6}$



$\frac{2}{9}$

Sí son equivalentes

No son equivalentes

④ a) $\frac{3}{6} = \frac{4}{8}$ $\begin{matrix} \uparrow \\ 8 \cdot 3 : 4 \end{matrix}$ b) $\frac{6}{15} = \frac{4}{10}$ $\leftarrow 6 \cdot 10 : 15$

c) $\frac{3}{16} = \frac{15}{80}$ $\begin{matrix} \uparrow \\ 16 \cdot 15 : 3 \end{matrix}$

⑤ a) $\frac{1}{2} = \frac{2}{4} = \frac{4}{8} = \frac{8}{16} = \frac{16}{32}$

$$b) \frac{8}{15} = \frac{16}{30} = \frac{32}{60} = \frac{64}{120} = \frac{128}{240}$$

$$c) \frac{2}{3} = \frac{4}{6} = \frac{8}{12} = \frac{16}{24}$$

$$d) \frac{11}{13} = \frac{22}{26} = \frac{44}{52} = \frac{88}{104} = \frac{176}{208}$$

$$\textcircled{6} \quad a) \frac{4}{8} = \frac{1}{2} \quad b) \frac{5}{15} = \frac{1}{3} \quad c) \frac{6}{18} = \frac{1}{3} \quad d) \frac{2}{6} = \frac{1}{3}$$

$$e) \frac{30}{45} = \frac{10}{15} = \frac{2}{3} \quad f) \frac{85}{100} = \frac{17}{20}$$

$\textcircled{7}$ La fracción $\frac{55}{77}$ no es irreducible, porque tanto 55 como 77 son divisibles por 11.

$$\textcircled{8} \quad a) \frac{3}{15} = \frac{1}{5} \quad b) \frac{7}{14} = \frac{1}{2} \quad c) \frac{10}{15} = \frac{2}{3} \quad d) \frac{25}{15} = \frac{5}{3}$$

$$e) \frac{12}{19} \text{ Irreducible} \quad f) \frac{33}{121} = \frac{3}{11}$$

$$\textcircled{9} \quad a) \frac{2}{3} = \frac{8}{12} \leftarrow 12:3 \cdot 2$$

$$\frac{5}{4} = \frac{15}{12} \leftarrow 12:4 \cdot 5$$

$$\text{m.c.m.}(3,4) = 2^2 \cdot 3 = 12$$

$$b) \frac{1}{2} = \frac{20}{40}$$

$$\frac{7}{8} = \frac{35}{40}$$

$$\frac{3}{10} = \frac{12}{40}$$

$$\text{m.c.m.}(2,8,10) = 2^3 \cdot 5 = 40$$

$$c) \frac{3}{4} = \frac{45}{60}$$

$$\frac{5}{12} = \frac{25}{60}$$

$$\frac{7}{3} = \frac{140}{60}$$

$$\frac{11}{20} = \frac{33}{60}$$

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

$$d) \frac{3}{8} = \frac{6}{16}$$

$$\frac{5}{16} = \frac{5}{16}$$

$$m.c.m(8, 16) = 2^4 = 16$$

$$e) \frac{7}{40} = \frac{63}{360}$$

$$\frac{8}{36} = \frac{80}{360}$$

$$\frac{1}{18} = \frac{20}{360}$$

$$m.c.m(40, 36, 18) = 2^3 \cdot 3^2 \cdot 5$$

$$f) \frac{5}{7} = \frac{30}{42}$$

$$\frac{2}{3} = \frac{28}{42}$$

$$\frac{3}{14} = \frac{9}{42}$$

$$m.c.m(7, 3, 14) = 2 \cdot 3 \cdot 7 = 42$$

$$(10) a) \frac{4}{3} \text{ y } \frac{5}{6}$$

Aquí no hay que hacer ninguna operación, ya que $\frac{4}{3}$ es impropia (mayor que la unidad) y $\frac{5}{6}$ es propia (menor que la unidad).

$$\frac{4}{3} > \frac{5}{6}$$

$$b) \frac{1}{3} = \frac{5}{15}$$

$$\frac{2}{5} = \frac{6}{15}$$

$$m.c.m(3, 5) = 3 \cdot 5 = 15 \quad \left. \vphantom{m.c.m(3, 5)} \right\} \Rightarrow \frac{1}{3} < \frac{2}{5}$$

$$c) \frac{8}{9} = \frac{32}{36}$$

$$\frac{11}{12} = \frac{33}{36}$$

$$m.c.m(9, 12) = 2^2 \cdot 3^2 = 36 \quad \left. \vphantom{m.c.m(9, 12)} \right\} \Rightarrow \frac{8}{9} < \frac{11}{12}$$

$$d) \frac{2}{3} = \frac{10}{15}$$

$$\frac{4}{5} = \frac{12}{15}$$

$$m.c.m(3, 5) = 3 \cdot 5 = 15 \quad \left. \vphantom{m.c.m(3, 5)} \right\} \Rightarrow \frac{2}{3} < \frac{4}{5}$$

$$e) \frac{4}{7} = \frac{44}{77}$$

$$\frac{5}{11} = \frac{35}{77}$$

$$m.c.m(7, 11) = 7 \cdot 11 = 77 \quad \left. \vphantom{m.c.m(7, 11)} \right\} \Rightarrow \frac{4}{7} > \frac{5}{11}$$

$$f) \frac{3}{4} = \frac{6}{8}$$

$$\frac{7}{8} = \frac{7}{8}$$

$$m.c.m(4,8) = 2^3 = 8 \quad \left. \vphantom{m.c.m(4,8)} \right\} \Rightarrow \frac{3}{4} < \frac{7}{8}$$

$$g) \frac{15}{19} = \frac{255}{323}$$

$$\frac{14}{17} = \frac{266}{323}$$

$$m.c.m(19,17) = 17 \cdot 19 = 323 \quad \left. \vphantom{m.c.m(19,17)} \right\} \Rightarrow \frac{15}{19} < \frac{14}{17}$$

$$h) \frac{8}{11} = \frac{96}{132}$$

$$\frac{11}{12} = \frac{121}{132}$$

$$m.c.m(11,12) = 2^2 \cdot 3 \cdot 11 = 132 \quad \left. \vphantom{m.c.m(11,12)} \right\} \Rightarrow \frac{8}{11} < \frac{11}{12}$$