Def. Una fracción en su forma más simple tiene numerador y denominador sin divisores en común diferentes de 1.

Problemas (individual)

4.27) $\frac{\cancel{12}^{\,2}}{\cancel{30}^{\,5}} = \boxed{\frac{2}{5}}$

4.28) $(ac) \div (bc) = a \div b$

$ac \cdot \frac{1}{bc} = a \cdot \frac{1}{b} \cdot \left(c \cdot \frac{1}{c}\right)$

$= a \cdot \frac{1}{b} = \frac{a}{b}$

4.29)

$$\frac{225}{540} = \frac{5 \cdot 45}{5 \cdot 108} = \frac{45}{108} = \frac{9 \cdot 5}{9 \cdot 12} = \boxed{\frac{5}{12}}$$

4.30)

(a) $\frac{\cancel{8}^{\,2}}{\cancel{8}^{\,2}} \cdot \frac{\cancel{12}^{\,3}}{\cancel{8}^{\,4}} = \boxed{\frac{9}{8}}$

b) $\left(-\frac{\cancel{24}^{\,\cancel{8}^{\,1}}}{\cancel{32}^{\,\cancel{8}^{\,1}}}\right) \cdot \left(-\frac{\cancel{36}^{\,9}}{\cancel{45}^{\,\cancel{15}^{\,5}}}\right)$

c) $\left(-\frac{\cancel{40}^{\,\cancel{2}^{\,1}}}{\cancel{27}^{\,9}}\right) \cdot \frac{\cancel{21}^{\,7}}{\cancel{160}^{\,\cancel{8}^{\,4}}}$

$\boxed{\frac{3}{5}}$

$\boxed{-\frac{7}{36}}$

d) $\frac{34}{33} \div \frac{51}{44} = \frac{\cancel{34}^{\,2}}{\cancel{33}^{\,3}} \cdot \frac{\cancel{44}^{\,4}}{\cancel{51}^{\,3}}$

$= \boxed{\frac{8}{9}}$

4.31)

$$96 \cdot X = 64$$

$$X = \frac{64}{96} = \frac{\cancel{32}^{16}}{\cancel{48}_{24}} = \frac{16}{24} = \frac{4}{6} = \boxed{\frac{2}{3}}$$

4.32)

(a) $$\frac{2 \cdot 5^2}{3 \cdot 5^3} = \boxed{\frac{2}{15}}$$

(b) $$\frac{2 \cdot 7^2}{3 \cdot 7^3} = \boxed{\frac{2}{21}}$$

(c) $$\frac{2x^2}{3x^3} = \frac{x^2}{x^3} \cdot \frac{2}{3} = \frac{1}{x} \cdot \frac{2}{3} = \boxed{\frac{2}{3x}}$$

4.33) $$\frac{\cancel{16}^{8}\ 40\, c^{\cancel{3}}\, d^{\cancel{2}^{1}}}{16\, c^{\cancel{8}^{2}}\, \cancel{d}} = \boxed{\frac{5d}{2c^2}}$$

$\cancel{4}$
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Ejercicios

4.5.1)

(a) $$\frac{36}{27} = \boxed{\frac{4}{3}}$$

(b) $$\frac{\cancel{256}^{64}}{\cancel{304}_{152}} = \frac{\cancel{64}^{16}}{\cancel{76}_{\cancel{38}_{19}}} = \boxed{\frac{16}{19}}$$

(c) $$\frac{\cancel{4800}^{24}}{\cancel{12000}_{60}} = \frac{24}{60} = \frac{6}{15} = \boxed{\frac{2}{5}}$$

(d) $\frac{1260}{1008} = \frac{315}{252} = \frac{105}{84} = \boxed{\frac{5}{4}}$

4.5.2)

(a) $\frac{24}{80} \cdot \frac{28}{49} = \frac{8 \cdot 3 \cdot 7 \cdot 2 \cdot 2}{8 \cdot 5 \cdot 2 \cdot 7^2} = \frac{3 \cdot 2}{5 \cdot 7} = \boxed{\frac{6}{35}}$

(b) $\frac{88}{34} \div \frac{44}{51} = \frac{\overset{2}{\cancel{88}}}{\cancel{34}_{17}} \cdot \frac{\overset{3}{\cancel{51}}}{\cancel{44}_{1}} = \boxed{3}$

(c) $\left(-\frac{\overset{28}{\cancel{84}}}{\cancel{125}_{5}}\right) \cdot \frac{\overset{4}{\cancel{100}}}{\cancel{63}_{21}} = -\left(\frac{\overset{4}{\cancel{28}} \cdot 4}{5 \cdot \cancel{21}_{3}}\right) = \boxed{\frac{-16}{15}}$

(d) $\frac{400}{39} \div \frac{1300}{y} = \frac{\cancel{400}}{\cancel{39}_{13}} \cdot \frac{y^{\overset{3}{}}}{\cancel{1300}} = \boxed{\frac{12}{169}}$

4.5.3)

(a) $\frac{4a^3b}{2ab} = \boxed{2a^2}$

(b) $\frac{\overset{2}{\cancel{8}}m^7p^{12}}{\cancel{12}_{3}m^5p^{15}} = \boxed{\frac{2m^2}{3p^3}}$

4.5.4)

$$\frac{3}{4}\cdot\frac{4}{5}\cdot\frac{5}{6}\cdot\frac{6}{7}\cdot\frac{7}{8}\cdot\frac{8}{9}\cdot\frac{9}{10}\cdot\frac{10}{11}\cdot\frac{11}{12}$$

$$\frac{3}{12} = \boxed{\frac{1}{4}}$$

4.5.5)

$$\frac{42x^{6}y^{6}}{35x^{2}y^{5}} = \frac{6\left(\frac{5}{4}\right)}{5} = \frac{6^{3}\cdot 5}{5\cdot 4_{2}} = \boxed{\frac{3}{2}}$$