

## UNIDAD 4: FRACCIONES

¿Qué es una fracción?

Es una división de n<sup>o</sup> enteros.

Elementos

$$1: 2 = \frac{1}{2} \leftarrow \text{Numerador}$$

$$2 \leftarrow \text{Denominador}$$

$$\frac{-1}{2}$$

¿Cómo se nombra?

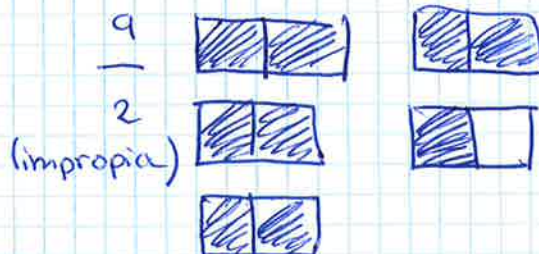
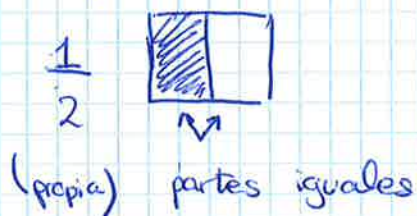
$$\frac{1}{2} \text{ un medio}$$

$$\frac{6}{4} \text{ seis cuartos}$$

$$\frac{2}{3} \text{ dos tercios}$$

$$\frac{3}{5} \text{ tres quintos}$$

Representación



La fracción como operador.

$$\frac{3}{4} \text{ de } 20 = (20 : 4) \cdot 3 = 15$$

**IMPORTANTE**

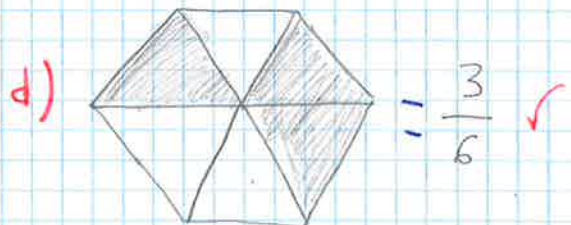
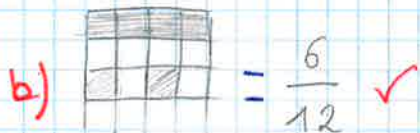
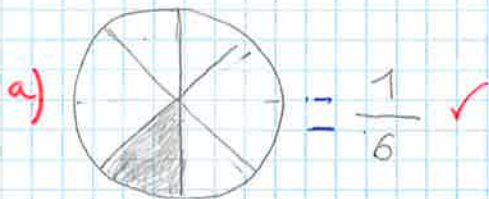
$$\frac{-4}{2} = \frac{4}{-2} = \frac{4}{2}$$



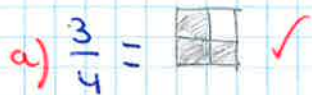
1- a)  $\frac{3}{4}$  ✓      c)  $\frac{12}{25}$  ✓

b)  $\frac{1}{2}$  ✓      d)  $\frac{2}{5}$  ✓

2-



4-



5- a)  $\frac{18}{3} = 6$  ✓

c)  $\frac{-45}{9} = -5$  ✓

b)  $\frac{20}{10} = 2$  ✓

d)  $\frac{-36}{4} = -9$  ✓

6- a)  $\frac{1500}{5} = 300$  ✓

c)  $\frac{162}{9} = 18$  ✓

b)  $\frac{-270}{-3} = 90$  ✓

d)  $\frac{-144}{12} = -12$  ✓

7. a)  $\frac{7}{8}$  de 200 =  $200 : 8 \cdot 7 = 25 \cdot 7 = 175$  ✓

b)  $-\frac{5}{12}$  de 3600 =  $3600 : 12 \cdot 5 = 300 \cdot 5 = -1.500$  ✓

c)  $\frac{3}{7}$  de -98 =  $-98 : 7 \cdot 3 = -14 \cdot 3 = -42$  ✓

d)  $\frac{12}{100}$  de 20 000 =  $20\ 000 : 100 \cdot 12 = 200 \cdot 12 = 2400$  ✓

9. a)  $\frac{3}{8}$  de 2000 = 750

$2000 : 8 \cdot 750 = 250 \cdot 3 = 750$  ✓

b)  $\frac{5}{8}$  de 512 = 320

$512 \cdot 5 : 8 = 2560 : 8 = 320$  ✓

c)  $-\frac{12}{4}$  de 320 = -1360

$320 : 4 \cdot (-1360) = 80 \cdot -1360 = -10880$  ✓

d)  $\frac{2}{3}$  de 600 = 400 **IMPORTANTE**

$400 : 2 = 200 \cdot 3 = 600$  ✓

25/11/2020

**PÁG. 69 EJ. 10, 11, 12, 13**

10- Chicas:  $\frac{15}{27}$

Chicos:  $\frac{12}{27}$

11-  $\frac{5}{12}$  menores

R:  $\frac{7}{12}$  mayores de edad



$$12 = \frac{2}{9} \text{ ha leído } \checkmark$$

$$a) \frac{7}{9} \text{ le falta por leer } \checkmark$$

$$b) \frac{7}{9} \text{ de } 459 = 459 : 9 \cdot 7 = 357 \text{ le quedan por leer } \checkmark$$

$$13 = \frac{1}{100} \cdot \frac{1}{50} \cdot \frac{1}{20} \cdot \frac{1}{5} \checkmark$$

27/11/2020

PÁG. 71 EJ. 14, 16, 17, 18, 19, 21

$$14 - a) \frac{5}{12} \neq \frac{11}{24} = \begin{array}{r} \times 11 \\ 12 \\ \hline + 22 \\ \hline 132 \end{array} \quad \frac{24}{\times 5} = \frac{120}{920} \quad \checkmark \text{ No son equivalentes}$$

$$b) \frac{24}{36} \neq \frac{60}{90} = \begin{array}{r} 90 \\ \times 24 \\ \hline 360 \\ + 180 \\ \hline 2160 \end{array} \quad \frac{36}{\times 60} = \frac{2160}{2160} \quad \checkmark \text{ Si son equivalentes}$$

$$c) \frac{21}{48} \neq \frac{15}{42} = \begin{array}{r} 48 \\ \times 15 \\ \hline 240 \\ + 48 \\ \hline 720 \end{array} \quad \frac{21}{\times 42} = \frac{882}{882} \quad \checkmark \text{ No son equivalentes}$$

$$16 a) \frac{36}{16} \neq \frac{9}{4} = 36 \cdot 4 : 16 = 144 : 16 = 9 \quad \checkmark$$

$$b) \frac{1}{10} \neq \frac{7}{70} = 10 \cdot 7 : 70 = 70 : 70 = 1 \quad \checkmark$$

$$c) \frac{8}{24} \neq \frac{5}{15} = 24 \cdot 5 : 15 = 120 : 15 = 8 \quad \checkmark$$

$$17 - a) \frac{3}{4} = \frac{6}{8} = \frac{12}{16} \quad \checkmark$$

$$b) \frac{5}{8} = \frac{10}{16} = \frac{20}{32} \quad \checkmark$$

$$c) \frac{1}{6} = \frac{2}{12} = \frac{4}{24} \quad \checkmark$$

$$d) \frac{12}{24} = \frac{24}{48} = \frac{48}{96} \quad \checkmark$$

$$18 - a) \frac{30}{40} = \frac{15}{20} = \frac{3}{4} \quad \checkmark$$

$$b) \frac{56}{84} = \frac{28}{42} = \frac{4}{6} \quad \checkmark$$

$$c) \frac{12}{36} = \frac{2}{6} = \frac{1}{3}$$

$$d) \frac{42}{105} = \frac{14}{35} = \frac{2}{5}$$

$$19 - a) \frac{300}{400} = \frac{3}{4}$$

$$b) \frac{148}{264} = \frac{37}{66} = \frac{37}{66} = \frac{37}{66}$$

$$c) \frac{128}{256} = \frac{64}{128} = \frac{32}{64} = \frac{16}{32} = \frac{1}{2}$$

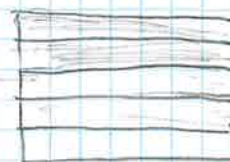
$$d) \frac{320\,000}{360\,000} = \frac{16}{18} = \frac{8}{9}$$



$$21. a) \frac{24}{32} = \frac{12}{16}$$



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



$$b) \frac{15}{40} = \frac{3}{8}$$



$$d) \frac{75}{100} = \frac{6}{8}$$



30/11/2020

PÁG. 83 EJ. 72, 73, 74, 75, 76, 77, 78, 79, 80, 81 y 82.

$$72. a) \frac{3}{4} \checkmark \quad b) 2\frac{3}{4} \checkmark \quad c) \frac{9}{10} \checkmark \quad d) \frac{5}{30} \checkmark$$

$$73. a) \frac{1}{6} \checkmark \quad c) \frac{3}{5} \checkmark$$

$$b) \frac{2}{5} \checkmark \quad d) \frac{2}{6} \checkmark$$

$$74. a) \frac{4}{7} \checkmark$$



$$b) \frac{5}{9} \checkmark$$



$$c) \frac{7}{20} \checkmark$$



$$d) \frac{19}{4} \checkmark$$



$$76. a) \frac{7}{12} \neq \frac{15}{11} \Rightarrow \frac{180}{77} \quad \text{No son equivalentes.} \checkmark$$

$$b) \frac{12}{30} \neq \frac{30}{75} \Rightarrow \frac{900}{900} \quad \text{Sí, son equivalentes.} \checkmark$$

$$c) \frac{24}{64} \neq \frac{60}{160} \Rightarrow \frac{3840}{3840} \quad \text{Sí, son equivalentes.} \checkmark$$

$$d) \frac{65}{32} \neq \frac{194}{96} \Rightarrow \frac{6208}{6240} \quad \text{No son equivalentes.} \checkmark$$



\* 77. a)  $\frac{9}{12}$  y  $\frac{6}{8}$  =

78. a)  $\frac{4}{5} = \frac{8}{10} = \frac{16}{20} = \frac{32}{40}$  ✓

b)  $\frac{1}{9} = \frac{3}{27} = \frac{9}{81} = \frac{27}{243}$  ✓

c)  $\frac{7}{3} = \frac{14}{6} = \frac{42}{18} = \frac{84}{36}$  ✓

d)  $\frac{-6}{5} = \frac{-12}{10} = \frac{-24}{20} = \frac{-48}{40}$  ✓

29. a)  $\frac{40}{500} = \frac{200}{2500} = \frac{100}{1250} = \frac{20}{250}$  ✓

c)  $\frac{140}{42} = \frac{70}{21} = \frac{10}{3}$  ✓

b)  $\frac{30}{42} = \frac{15}{21} = \frac{5}{7}$  ✓

d)  $\frac{66}{99} = \frac{22}{33} = \frac{2}{3}$  ✓

81. a)  $\frac{80}{124} = \frac{40}{62} = \frac{20}{31}$  ✓

c)  $\frac{3600}{540} = \frac{1800}{270} = \frac{180}{27} = \frac{60}{9} = \frac{20}{3}$  ✓

b)  $\frac{88}{242} = \frac{44}{121} = \frac{4}{11}$  ✓

d)  $\frac{162}{216} = \frac{81}{108} = \frac{27}{36} = \frac{9}{12} = \frac{3}{4}$

82. a)  $\frac{3}{4} = \frac{60}{80}$  ✓

c)  $\frac{15}{90} = \frac{90}{540}$  ✓

b)  $\frac{16}{40} = \frac{240}{60}$  ✓

d)  $\frac{3}{4} = \frac{35}{100}$  ✓

\* 77.  $\frac{9}{12}$  y  $\frac{6}{8}$



Son equivalentes ✓

$\frac{3}{9}$ ,  $\frac{7}{18}$  y  $\frac{2}{6}$



No son equivalentes ✓



Reducción a común denominador

$$\bullet \frac{1}{2} = \frac{8 \cdot 16:2 \cdot 1}{16} \quad \underline{1^a \text{ Forma}}$$

•  $2 \cdot 8 = 16$  de denominador común.

$$\bullet \frac{3}{8} = \frac{6 \cdot 16:8 \cdot 3}{16}$$

2ª Forma

$$\bullet \frac{1}{2} > \frac{3}{8}$$

$$\bullet \frac{1}{2} = \frac{4}{8}$$

$$\bullet \frac{3}{8} = \frac{3}{8}$$

m.c.m(2, 8)

## PÁG. 73 EJ. 24

$$24. a) \frac{3}{50}, \frac{19}{50} \text{ y } \frac{7}{50} = \frac{3}{50} < \frac{7}{50} < \frac{19}{50} \quad \checkmark$$

$$b) \frac{7}{9}, \frac{-4}{9} \text{ y } \frac{8}{9} = \frac{-4}{9} < \frac{7}{9} < \frac{8}{9} \quad \checkmark$$

$$c) \frac{3}{5}, \frac{3}{7} \text{ y } \frac{3}{9} = \frac{84}{140}, \frac{60}{140} \text{ y } \frac{105}{140} = \frac{3}{7} < \frac{3}{8} < \frac{3}{4} \quad \checkmark$$

$$d) \frac{23}{41}, \frac{23}{40} \text{ y } \frac{23}{39} = \frac{35880}{63960}, \frac{36777}{63960} \text{ y } \frac{37720}{63960} = \frac{23}{41} < \frac{23}{40} < \frac{23}{39} \quad \checkmark$$

## PÁG. 73 EJ. 26, 30

2 / 12 / 2020

$$26. a) \frac{7}{4} \circ \frac{5}{6} \Rightarrow \frac{14}{18} \text{ y } \frac{15}{18} = \frac{7}{9} < \frac{5}{6} \quad \checkmark$$

$$b) \frac{3}{8} \circ \frac{5}{6} \Rightarrow \frac{6}{16} \text{ y } \frac{15}{16} = \frac{3}{8} > \frac{5}{6} \quad \checkmark$$

$$c) \frac{7}{10} \circ \frac{3}{35} \Rightarrow \frac{49}{70} \text{ y } \frac{6}{70} = \frac{7}{10} > \frac{3}{35} \quad \checkmark$$



$$30- a) \frac{2}{3} \cdot \frac{5}{6} = \frac{4}{6} \cdot \frac{5}{6} \checkmark$$

$$b) \frac{3}{10} \cdot \frac{3}{15} = \frac{9}{30} \cdot \frac{6}{30} \checkmark$$

$$c) \frac{1}{6}, \frac{5}{12} \cdot \frac{7}{28} = \frac{14}{84}, \frac{35}{84} \cdot \frac{21}{84} \checkmark$$

$$86- a) \frac{3}{16} \cdot \frac{1}{16} = \frac{1}{16} < \frac{3}{16}$$

$$b) \frac{24}{35}, \frac{22}{35} \cdot \frac{29}{35} = \frac{22}{35} < \frac{24}{35} < \frac{29}{35}$$

$$c) \frac{12}{5} \cdot \frac{12}{7} = \frac{12}{5} < \frac{12}{7}$$

$$d) \frac{32}{9}, \frac{32}{29} \cdot \frac{32}{49} = \frac{32}{9} < \frac{32}{29} < \frac{32}{49}$$

4/12/2020

### FICHA FRACCIONES EJ. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

$$1- a) \frac{3}{4} \cdot \frac{30}{40} = \frac{120}{120} \quad \text{Si son equivalentes } \checkmark$$

$$b) \frac{51}{39} \cdot \frac{17}{13} = \frac{663}{663} \quad \text{Si son equivalentes } \checkmark$$

$$c) \frac{31}{29} \cdot \frac{33}{86} = \frac{2666}{957} \quad \text{No son equivalentes } \checkmark$$

$$2- \frac{2}{20} = \frac{4}{40} = \frac{8}{80} = \frac{16}{160} \quad \checkmark$$

$$3- a) \frac{3}{4} \cdot \frac{9}{10} \quad \begin{array}{l} \text{[3/4]} \\ \text{[9/10]} \end{array} \quad \text{No son equivalentes } \checkmark$$

$$b) \frac{4}{5} \cdot \frac{12}{15} \quad \begin{array}{l} \text{[4/5]} \\ \text{[12/15]} \end{array} \quad \text{Son equivalentes } \checkmark$$



$$c) \frac{2}{4} \neq \frac{3}{6}$$



Son equivalentes ✓

$$d) \frac{3}{8} \neq \frac{2}{9}$$



No son equivalentes. ✓

$$4- a) \frac{3}{6} = \frac{4}{8} \quad \checkmark$$

$$b) \frac{6}{15} = \frac{4}{10} \quad \checkmark$$

$$c) \frac{3}{16} = \frac{15}{80} \quad \checkmark$$

$$5- a) \frac{4}{8} = \frac{8}{16} = \frac{16}{32} = \frac{32}{64} = \frac{64}{128}$$

$$c) \frac{2}{13} = \frac{4}{26} = \frac{8}{52} = \frac{16}{104} = \frac{32}{208}$$

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

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

$$6- a) \frac{4}{8} = \frac{2}{4} = \frac{1}{2} \quad \checkmark$$

$$c) \frac{6}{18} = \frac{3}{9} = \frac{1}{3} \quad \checkmark$$

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

$$d) \frac{2}{6} = \frac{1}{3} \quad \checkmark$$

$$e) \frac{30}{45} = \frac{10}{15} = \frac{2}{3} \quad \checkmark$$

$$g) \frac{85}{100} = \frac{17}{20} \quad \checkmark$$

7-  $\frac{55}{70} = \frac{11}{14}$  no es irreducible porque se puede sacar otra fracción. ✓

$$8- a) \frac{3}{15} = \frac{1}{5} \quad \checkmark$$

$$d) \frac{25}{15} = \frac{5}{3} \quad \checkmark$$

$$b) \frac{7}{14} = \frac{1}{2} \quad \checkmark$$

$$e) \frac{12}{19} = \quad \checkmark$$

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

$$g) \frac{33}{121} = \frac{3}{11} = \quad \checkmark$$

$$9- a) \frac{2}{3}, \frac{5}{4} = \frac{8}{12} \neq \frac{15}{12} \quad \checkmark$$

$$b) \frac{1}{2}, \frac{7}{8}, \frac{3}{10} = \frac{20}{40}, \frac{35}{40} \neq \frac{12}{40} \quad \checkmark$$



$$c) \frac{3}{4}, \frac{5}{12}, \frac{7}{3} \text{ y } \frac{11}{20} = \frac{45}{60}, \frac{25}{60}, \frac{140}{60} \text{ y } \frac{33}{60} \checkmark$$

$$d) \frac{3}{8}, \frac{5}{16} = \frac{6}{16} \text{ y } \frac{5}{16} \checkmark$$

$$e) \frac{7}{40}, \frac{8}{36}, \frac{1}{18} = \frac{63}{360}, \frac{80}{360} \text{ y } \frac{20}{360} \checkmark$$

$$g) \frac{5}{7}, \frac{2}{3}, \frac{3}{14} = \frac{30}{42}, \frac{28}{42} \text{ y } \frac{9}{42} \checkmark$$

$$10 a) \frac{4}{3} \text{ y } \frac{5}{6} = \frac{4}{3} > \frac{5}{6} \checkmark$$

$$e) \frac{4}{7} \text{ y } \frac{5}{11} = \frac{4}{7} > \frac{5}{11} \checkmark$$

$$b) \frac{1}{3} \text{ y } \frac{2}{5} = \frac{1}{3} < \frac{2}{5} \checkmark$$

$$g) \frac{3}{4} \text{ y } \frac{7}{8} = \frac{3}{4} < \frac{7}{8} \checkmark$$

$$c) \frac{8}{9} \text{ y } \frac{11}{12} = \frac{8}{9} < \frac{11}{12} \checkmark$$

$$g) \frac{15}{19} \text{ y } \frac{14}{17} = \frac{15}{19} < \frac{14}{17} \checkmark$$

$$d) \frac{2}{3} \text{ y } \frac{4}{5} = \frac{2}{3} < \frac{4}{5} \checkmark$$

$$h) \frac{8}{14} \text{ y } \frac{11}{12} = \frac{8}{14} < \frac{11}{12} \checkmark$$

9/12/2020

### FICHA FRACCIONES 11 - 20

11.  $\frac{4}{6}$  son blancas.  $\checkmark$

12. Le quedan  $\frac{5}{8}$   $\checkmark$

13.  $30 : 5 = 6$   
 $\frac{1}{6}$  se llena un vaso  $\checkmark$

14. Quedará vacía un  $\frac{3}{5}$  de los asientos.  $\checkmark$



$$15 - \frac{3}{200} \cdot 4 = 50 \Rightarrow \frac{\beta \cdot 200}{4 \cdot 10} = \frac{500}{40} \quad \checkmark$$

Le quedan  $1/40$  de kilogramos que son 50 gramos.

$$16 - 4 \cdot 3 = 12$$

Tenra 12 euros.  $\checkmark$

17 - El kg está a 8 €  $\checkmark$

18 - La longibud era de 8 Km  $\checkmark$

19 - La recorrida es de 25 km  $\checkmark$

20 - Le queda 11 €  $\checkmark$

10/12/2020

### OPERACIONES CON FRACCIONES.

$$1 - a) \frac{3}{5} + \frac{4}{3} = \frac{9}{15} + \frac{20}{15} = \frac{29}{15} \quad \checkmark$$

$$b) \frac{7}{12} + \frac{7}{4} = \frac{7}{12} + \frac{21}{12} = \frac{28}{12} = \frac{14}{6} = \frac{7}{3} \quad \checkmark$$

$$c) \frac{3}{5} - \frac{2}{5} = \frac{3-2}{5} = \frac{1}{5} \quad \checkmark$$

$$d) \frac{13}{12} - \frac{2}{3} = \frac{13}{12} - \frac{8}{12} = \frac{5}{12} \quad \checkmark$$

$$e) \frac{1}{6} + \frac{3}{4} - \frac{1}{2} = \frac{2}{12} + \frac{9}{12} - \frac{6}{12} = \frac{5}{12} \quad \checkmark$$

$$f) \frac{3}{4} - \frac{1}{20} + \frac{5}{8} - \frac{7}{5} = \frac{30}{40} - \frac{2}{40} + \frac{25}{40} - \frac{56}{40} = \frac{-3}{40} \quad \checkmark$$



$$2- 1) \frac{1}{5} + \frac{1}{3} + \frac{2}{15} + 2 = \frac{8}{15} + \frac{5}{15} + \frac{2}{15} + \frac{30}{15} = \frac{40}{15} = \frac{8}{3} \quad \checkmark$$

$$2) \frac{7}{5} + \frac{2}{30} + \frac{1}{6} + 3 = \frac{42}{30} + \frac{2}{30} + \frac{5}{30} + \frac{90}{30} = \frac{139}{30} \quad \checkmark$$

$$3) \frac{4}{9} - \frac{5}{6} - \frac{1}{2} = \frac{8}{18} - \frac{15}{18} - \frac{9}{18} = \frac{-16}{18} = \frac{-8}{9} \quad \checkmark$$

$$4) 2 + \frac{11}{7} + \frac{13}{14} - 5 = \frac{88}{14} + \frac{22}{14} + \frac{13}{14} - \frac{70}{14} = \frac{63}{14} = \frac{9}{2} \quad \checkmark$$

$$5) \frac{2}{3} + \frac{3}{4} = \frac{8}{12} + \frac{9}{12} = \frac{17}{12} \quad \checkmark$$

$$6) \frac{7}{8} - \frac{3}{5} + \frac{3}{4} = \frac{35}{40} - \frac{24}{40} + \frac{30}{40} = \frac{41}{40} \quad \checkmark$$

$$7) 8 + \frac{1}{2} + 3 + \frac{1}{4} + \frac{1}{8} = \frac{64}{8} + \frac{4}{8} + \frac{24}{8} + \frac{12}{8} + \frac{1}{8} = \frac{95}{8} \quad \checkmark$$

$$8) \frac{2}{7} + \frac{1}{2} + \frac{5}{14} = \frac{4}{14} + \frac{7}{14} + \frac{5}{14} = \frac{16}{14} = \frac{8}{7} \quad \checkmark$$

$$9) \frac{1}{2} + \frac{1}{3} - \frac{1}{6} = \frac{6}{12} + \frac{4}{12} - \frac{2}{12} = \frac{8}{12} = \frac{2}{3} \quad \checkmark$$

$$3- \frac{3}{4} + \frac{1}{12} = \frac{9}{12} + \frac{1}{12} = \frac{10}{12} = \frac{5}{6} \quad \checkmark$$

R: A  $\frac{3}{4}$  le salta  $\frac{1}{12}$  para llegar a  $\frac{5}{6}$

14/12/2020

$$4- a) \frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15} \quad \checkmark$$

$$c) \frac{1}{8} \cdot \frac{16}{18} = \frac{16}{120} = \frac{8}{60} = \frac{4}{30} = \frac{2}{15} \quad \checkmark$$

$$b) \frac{7}{2} \cdot \frac{3}{4} = \frac{21}{8} \quad \checkmark$$

$$d) \frac{2}{9} \cdot \frac{24}{100} = \frac{48}{900} = \frac{8}{150} = \frac{4}{75} \quad \checkmark$$



$$e) \frac{5}{5} \cdot \frac{3}{10} = \frac{15}{50} = \frac{3}{10} \checkmark$$

$$g) \frac{5}{2} \cdot \frac{2}{5} = \frac{10}{10} = \frac{2}{2} = \frac{1}{1} \checkmark$$

$$5- a) \frac{1}{3} = \frac{3}{1} \checkmark$$

$$c) \frac{5}{3} = \frac{3}{5} \checkmark$$

$$b) \frac{2}{5} = \frac{5}{2} \checkmark$$

$$d) \frac{1}{10} = \frac{10}{1} \checkmark$$

$$e) 8 = \frac{8}{8} \checkmark$$

6- a)

b)  $\checkmark$

c)

### FICHA 1: FRACCIONES EJ. 1, 2, 3, 4, 8

15/12/2020

1. a) Hay 12 chicas.  $\checkmark$

$$b) \frac{20}{100} = \frac{10}{50} = \frac{5}{25} = \frac{1}{5} \text{ No tiene trabajo. } \checkmark$$

$$c) \text{ Me gasto } \frac{1}{4} \checkmark$$

$$d) \frac{3}{5} \text{ se ha gastado } \checkmark$$

$$e) \frac{6}{9} \text{ no son rojas, } \frac{3}{9} \text{ son amarillas. } \checkmark$$

$$8) \frac{2}{3} \text{ de } 9 = 9 : 3 \cdot 2 = 6$$

$$\frac{1}{3} \text{ de } 6 = 6 : 3 \cdot 1 = 2 \text{ s } \checkmark$$

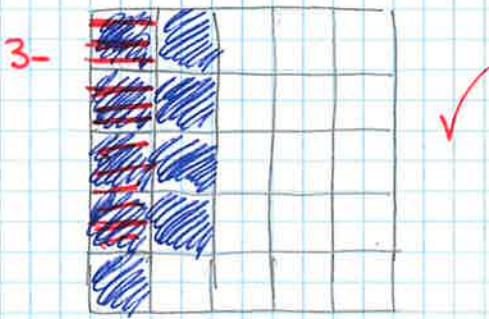
$$2- a) \frac{1}{3} \text{ Un tercio } \checkmark$$

$$c) \frac{4}{7} \text{ Cuatro séptimos } \checkmark$$

$$b) \frac{1}{5} \text{ Un quinto } \checkmark$$

$$d) \frac{3}{11} \text{ Tres onceavos } \checkmark$$





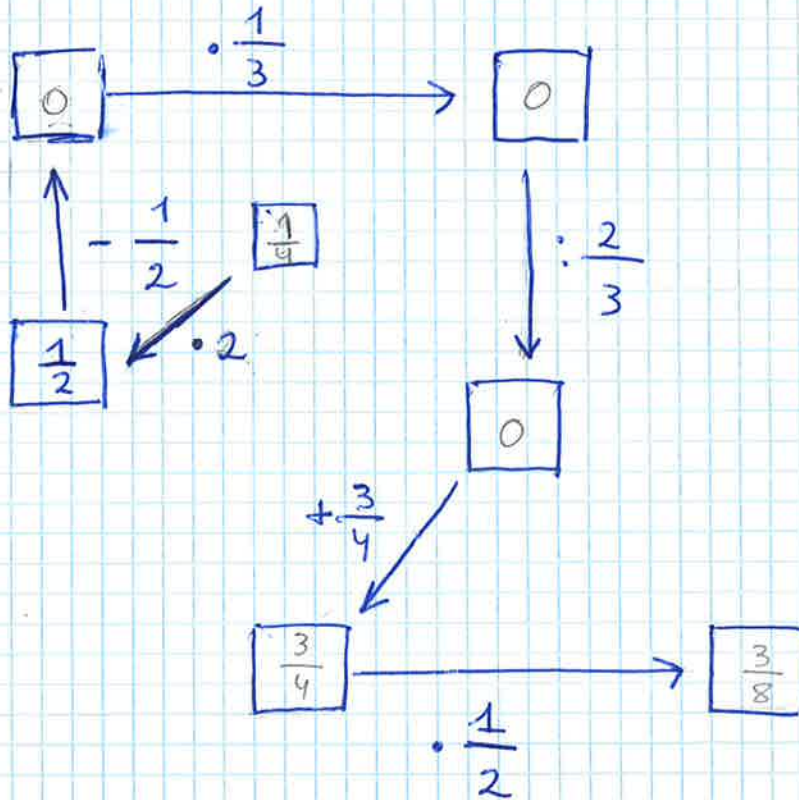
4-  $\frac{3}{2} = 3 = \frac{9}{50} = \frac{18}{50} = \frac{90}{250}$  ✓

- 5-1 división ✓
- 2 equivalentes ✓
- 3 fracción ✓
- 4 denominador ✓
- 5 Numerador ✓
- 6 inversa ✓

16/12/20

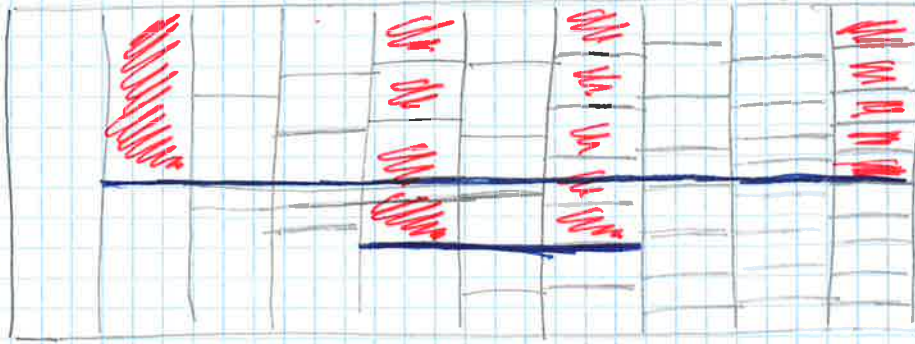
**EJ. 1, 2, 3, 4 FRACCIONES**

1.





2.



$$a) \frac{2}{3} > \frac{3}{5}$$

$$b) \frac{3}{5} < \frac{5}{6}$$

$$c) \frac{3}{5} > \frac{5}{7}$$

~~$$\frac{1}{2} \text{ y } \frac{5}{10} \text{ si son equivalentes.}$$~~

~~$$\frac{4}{5} \text{ y } \frac{5}{7} \text{ si son equivalentes.}$$~~

$$3. a) \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} + \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} = \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} \checkmark$$

$$b) \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} + \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} = \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} \checkmark$$

$$c) \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} - \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array} = \begin{array}{|c|c|} \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \cdot & \cdot \\ \hline \end{array}$$

$$4. a) \frac{2}{3} + \frac{1}{4} - \frac{5}{2} = \frac{8}{12} + \frac{3}{12} - \frac{30}{12} = \frac{-19}{12}$$

$$b) \frac{3}{5} - \frac{2}{3} + \frac{1}{2} = \frac{18}{30} - \frac{20}{30} + \frac{15}{30} = \frac{13}{30}$$

$$c) \frac{2}{3} - \left( \frac{5}{6} + \frac{1}{2} \right) = \frac{2}{3} - \left( \frac{5}{6} + \frac{3}{6} \right) = \frac{2}{3} - \frac{8}{6} = \frac{4}{6} - \frac{8}{6} = \frac{-2}{6} \checkmark$$

$$d) \frac{2}{3} + \left( \frac{5}{6} - \frac{1}{2} \right) = \frac{2}{3} + \left( \frac{5}{6} - \frac{3}{6} \right) = \frac{2}{3} + \frac{2}{6} = \frac{4}{6} + \frac{2}{6} = \frac{6}{6} = 1 \checkmark$$



S-

L Z Z P R O P I A R U W T M  
 Z O Z C H F R A C C I O N W  
 T X N O Y L C A N T I D A D  
 K H H C O M P A R A C I O N  
 O R N I C B P O T E N C I A  
 W E J E N U M E R A D O R D  
 Z W O N F C O M U N N L V C  
 H M X T N O T O B A X N D H X  
 I R R E D U C I B L E P F H  
 A M P L I F I C A C I O N H  
 A N E Q U I V A L E N T E S  
 T B C A H I M P R O P I A K  
 D E N O M I N A D O R I X W  
 S I M P L I F I C A C I O N

$$7. \frac{1}{1 \cdot 2} = 0,5$$

Sin hacer

$$\frac{1}{1 \cdot 2} + \frac{1}{1 \cdot 2} = \frac{2}{3} = 0,6666\dots$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} = \frac{3}{4} = 0,75$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} = \frac{4}{5} = 0,8$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6} = 0,83333\dots$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6 \cdot 7} + \frac{1}{7} = 0,8714\dots$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6 \cdot 7} + \frac{1}{7 \cdot 8} + \frac{1}{8} = 0,875$$

$$\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6 \cdot 7} + \frac{1}{7 \cdot 8} + \dots = 1$$



8- Interacción 0: área 1

Mal hecho

$$\text{Interacción 1: } \text{área } 1/3 = 1/3^1$$

$$\text{Interacción 2: } \text{área } 1/9 = 1/3^2$$

$$\text{Interacción 3: } \text{área } 1/27 = 1/3^3$$

$$\text{Interacción 4: } \text{área } 1/81 = 1/3^4$$

...

$$\text{Interacción 6: } \text{área } 1/229 = 1/3^6$$

...

$$\text{Interacción } n\text{-ésima: } \text{área } 1/3^n$$

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### OPERACIONES COMBINADAS

$$1. \text{ a) } \frac{5}{6} - \frac{3}{4} \cdot \frac{2}{5} + \frac{3}{2} = \frac{5}{6} - \frac{6}{20} + \frac{3}{2} = \frac{50}{60} - \frac{6}{60} + \frac{90}{60} = \frac{134}{60}$$

$$\frac{134}{60} = \frac{67}{30}$$

$$b) \frac{5}{6} - \frac{3}{4} : \frac{2}{5} + \frac{3}{2} = \frac{5}{6} - \frac{15}{8} + \frac{3}{2} = \frac{20}{24} - \frac{45}{24} + \frac{36}{24} = \frac{11}{24}$$

$$c) \frac{1}{2} : \frac{3}{4} \cdot \frac{3}{5} + \frac{3}{2} = \frac{4}{6} \cdot \frac{3}{5} + \frac{3}{2} = \frac{12}{30} + \frac{45}{30} = \frac{57}{30} = \frac{19}{10}$$

$$d) \frac{1}{2} \cdot \frac{3}{4} : \frac{3}{5} + \frac{3}{2} = \frac{3}{8} : \frac{3}{5} + \frac{3}{2} = \frac{15}{24} + \frac{3}{2} = \frac{15}{24} + \frac{36}{24} = \frac{51}{24}$$

$$\frac{51}{24} = \frac{17}{8}$$

$$e) 6 - \frac{3}{8} : \frac{5}{4} - \frac{1}{20} = 6 - \frac{12}{40} - \frac{1}{20} = \frac{240}{40} - \frac{12}{40} - \frac{2}{40} = \frac{226}{40}$$

$$\frac{226}{40}$$



$$g) \frac{3}{4} : \frac{2}{5} = \frac{1}{3} \cdot \frac{4}{9} = \frac{15}{8} - \frac{4}{27} = \frac{405}{216} - \frac{32}{216} = \frac{373}{216}$$

$$g) 2 : \frac{8}{5} = \frac{10}{3} : 4 = \frac{10}{8} - \frac{16}{12} = \frac{30}{40} - \frac{32}{40} = \frac{-2}{40} = -\frac{1}{20}$$

$$h) \frac{1}{2} : 10 = 10 : \frac{1}{2} = \frac{1}{20} - 20 = \frac{1}{20} - \frac{400}{20} = -\frac{399}{20}$$

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$$2- \frac{3}{4} - \frac{1}{4} \cdot \left( \frac{3}{5} - \frac{1}{10} \right) = \frac{3}{4} - \frac{1}{4} \cdot \left( \frac{6}{10} - \frac{1}{10} \right) = \frac{3}{4} - \frac{1}{4} \cdot \frac{5}{10}$$

$$\frac{5}{10} = \frac{3}{4} - \frac{5}{40} = \frac{30}{40} - \frac{5}{40} = \frac{25}{40} = \frac{5}{8}$$

$$b) 5 + \frac{7}{3} : \left( \frac{4}{3} + 2 \right) = 5 + \frac{7}{3} : \left( \frac{4}{3} + \frac{6}{3} \right) = 5 + \frac{7}{3} : \frac{10}{3} =$$

$$5 + \frac{21}{30} = \frac{171}{30} = \frac{57}{10}$$

$$c) \frac{3}{8} - \frac{1}{4} : \left( \frac{2}{3} \cdot \frac{3}{4} \right) = \frac{3}{8} - \frac{1}{4} : \frac{6}{12} = \frac{3}{8} - \frac{12}{24} = \frac{9}{24} - \frac{12}{24} =$$

$$-\frac{3}{24} = -\frac{1}{8}$$

$$d) \frac{8}{3} - \left( \frac{1}{3} + \frac{1}{2} \right) : \frac{5}{4} = \frac{8}{3} - \left( \frac{2}{6} + \frac{3}{6} \right) : \frac{5}{4} = \frac{8}{3} - \frac{5}{6} : \frac{5}{4} =$$

$$\frac{8}{3} - \frac{20}{30} = \frac{80}{30} - \frac{20}{30} = \frac{60}{30} = 2$$



$$e) \left( \frac{8}{3} - \frac{1}{3} + \frac{1}{2} \right) : \frac{5}{4} = \left( \frac{16}{6} - \frac{2}{6} + \frac{3}{6} \right) : \frac{5}{4} = \frac{17}{6} : \frac{5}{4} = \frac{68}{30} = \frac{34}{15}$$

$$f) \frac{8}{3} - \left( \frac{1}{3} + \frac{1}{2} : \frac{5}{4} \right) = \frac{8}{3} - \left( \frac{1}{3} + \frac{4}{10} \right) = \frac{8}{3} - \left( \frac{10}{30} + \frac{12}{30} \right) =$$

$$\frac{8}{3} - \frac{22}{30} = \frac{80}{30} - \frac{22}{30} = \frac{58}{30} = \frac{29}{15}$$

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PÁG. 25 E.S. 35, 36

$$35 - a) \frac{3}{2} + \frac{3}{4} + \frac{3}{8} = \frac{12}{8} + \frac{6}{8} + \frac{3}{8} = \frac{21}{8} \quad \checkmark$$

$$b) \frac{27}{4} + \frac{31}{10} + \frac{3}{8} = \frac{270}{40} + \frac{124}{40} + \frac{15}{40} = \frac{409}{40} \quad \checkmark$$

$$36 - a) 1 + \frac{3}{10} - \frac{1}{4} = \frac{20}{20} + \frac{6}{20} - \frac{5}{20} = \frac{26}{20} - \frac{5}{20} = \frac{21}{20} \quad \checkmark$$

$$b) 3 - \frac{3}{5} + \frac{9}{4} = \frac{60}{20} - \frac{12}{20} + \frac{45}{20} = \frac{48}{20} + \frac{45}{20} = \frac{93}{20} \quad \checkmark$$

$$c) \frac{3}{20} - \frac{4}{5} + \frac{9}{10} - \frac{4}{80} = \frac{12}{80} - \frac{64}{80} + \frac{72}{80} - \frac{4}{80} = \frac{20}{80} = \frac{2}{8} = \frac{1}{4} \quad \checkmark$$

$$d) \frac{12}{6} - \frac{15}{5} + \frac{35}{7} = \frac{32}{16} = 2 - 3 + 5 - 2 = 2 \quad \checkmark$$

$$e) \frac{5}{6} - 2 - \frac{7}{4} + \frac{7}{20} = \frac{50}{60} - \frac{120}{60} + \frac{105}{60} + \frac{21}{60} = \frac{-154}{60} = -\frac{77}{30} \quad \checkmark$$

$$f) 27 + \frac{2}{45} - \frac{20}{3} + \frac{13}{10} = \frac{2430}{90} + \frac{8}{90} - \frac{600}{90} + \frac{117}{90} = \frac{1951}{90} \quad \checkmark$$



PÁG. 77 EJ. 43, 45, 46, 47

43- a)  $\frac{5}{6} \cdot \frac{4}{9} = \frac{20}{54} = \frac{10}{27} \checkmark$

d)  $8 \cdot \frac{5}{16} = \frac{40}{16} = \frac{5}{2} \checkmark$

b)  $\frac{3}{4} \cdot 7 = \frac{21}{4} \checkmark$

e)  $\frac{3}{4} \cdot \frac{5}{6} \cdot \frac{1}{8} = \frac{15}{192} = \frac{5}{64} \checkmark$

c)  $\frac{8}{27} \cdot \frac{81}{16} = \frac{8 \cdot 3 \cdot 27}{27 \cdot 2 \cdot 8} = \frac{3}{2} \checkmark$

g)  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} = \frac{1 \cdot 2 \cdot 3 \cdot 4}{2 \cdot 3 \cdot 4 \cdot 5} = \frac{1}{5} \checkmark$

45, a)  $\frac{3}{8} \Rightarrow \frac{8}{3} \checkmark$

b)  $\frac{6}{5} \Rightarrow \frac{5}{6} \checkmark$

c)  $\frac{1}{9} \Rightarrow 9 \checkmark$

d)  $12 \Rightarrow \frac{1}{12} \checkmark$

46. a)  $\frac{8}{9} : \frac{4}{9} = \frac{72}{36} = \frac{18}{9} = 2 \checkmark$

d)  $\frac{5}{12} : 10 = \frac{5}{120} = \frac{1}{24} \checkmark$

b)  $\frac{9}{2} : \frac{5}{2} = \frac{18}{35} \checkmark$

e)  $\frac{21}{5} : \frac{7}{10} = \frac{210}{35} = 6 \checkmark$

c)  $8 : \frac{4}{5} = \frac{40}{4} = 10$

g)  $\frac{1}{4} : \frac{1}{42} = \frac{42}{4} = 3 \checkmark$

47- a)  $\left(\frac{3}{5}\right)^2 = \frac{9}{25} \checkmark$

b)  $\left(\frac{1}{2}\right)^6 = \frac{1}{64} \checkmark$

c)  $\left(\frac{3}{10}\right)^4 = \frac{81}{10000} \checkmark$



Aufg. 79 ES, S3, S4, S5

$$S3 - a) \frac{5}{6} + \frac{1}{3} \cdot \frac{2}{5} = \frac{5}{6} + \frac{2}{15} = \frac{25}{30} + \frac{4}{30} = \frac{29}{30} \checkmark$$

$$b) \frac{5}{6} \cdot \frac{1}{3} + \frac{2}{5} = \frac{5}{18} + \frac{2}{5} = \frac{25}{90} + \frac{36}{90} = \frac{61}{90} \checkmark$$

$$c) \frac{7}{4} - \frac{3}{10} \cdot \frac{5}{6} = \frac{7}{4} - \frac{15}{60} = \frac{105}{60} - \frac{15}{60} = \frac{90}{60} = \frac{3}{2} \checkmark$$

$$d) \frac{13}{2} - \frac{1}{2} \cdot \frac{11}{4} = \frac{13}{2} - \frac{11}{8} = \frac{52}{8} - \frac{11}{8} = \frac{41}{8} \checkmark$$

$$S4 - a) \frac{19}{6} + \frac{5}{3} \cdot 4 = \frac{19}{6} + \frac{20}{3} = \frac{19}{6} + \frac{40}{6} = \frac{59}{6} \checkmark$$

$$b) 7 \cdot \frac{1}{3} + \frac{3}{4} = \frac{7}{3} + \frac{3}{4} = \frac{28}{12} + \frac{9}{12} = \frac{37}{12} \checkmark$$

$$c) 12 - \frac{3}{10} \cdot 6 = 12 - \frac{18}{10} = \frac{120}{10} - \frac{18}{10} = \frac{102}{10} = \frac{51}{5} \checkmark$$

$$d) \frac{23}{2} - \frac{1}{2} \cdot 11 = \frac{23}{2} - \frac{11}{2} = \frac{12}{2} = 6 \checkmark$$

$$S5 - a) \frac{5}{6} - \frac{3}{4} \cdot \frac{2}{5} + \frac{3}{2} = \frac{5}{6} - \frac{6}{20} + \frac{3}{2} = \frac{50}{60} - \frac{18}{60} + \frac{90}{60} = \frac{122}{60} \checkmark$$

$$b) \frac{5}{6} - \frac{3}{4} \cdot \frac{2}{5} + \frac{3}{2} = \frac{5}{6} - \frac{15}{8} + \frac{3}{2} = \frac{45}{24} - \frac{36}{24} + \frac{36}{24} = \frac{45}{24} = \frac{15}{8} \checkmark$$

$$c) \frac{1}{2} \cdot \frac{3}{4} \cdot \frac{3}{8} + \frac{3}{2} = \frac{4}{6} \cdot \frac{3}{8} + \frac{3}{2} = \frac{12}{30} + \frac{3}{2} = \frac{12}{30} + \frac{45}{30} = \frac{57}{30} = \frac{19}{10} \checkmark$$

$$d) \frac{1}{2} \cdot \frac{3}{4} \cdot \frac{3}{5} + \frac{3}{2} = \frac{3}{8} \cdot \frac{3}{5} + \frac{3}{2} = \frac{15}{24} + \frac{3}{2} = \frac{15}{24} + \frac{36}{24} = \frac{51}{24} \checkmark$$

$$e) 6 - \frac{3}{8} \cdot \frac{5}{4} - \frac{1}{20} = 6 - \frac{15}{40} - \frac{1}{20} = \frac{240}{40} - \frac{15}{40} - \frac{2}{40} = \frac{223}{40} = \frac{55}{10} \checkmark$$

$$\frac{29}{5} \checkmark$$



$$g) \frac{3}{4} : \frac{2}{5} - \frac{1}{3} \cdot \frac{4}{9} = \frac{15}{8} - \frac{4}{27} = \frac{405}{216} - \frac{32}{216} = \frac{373}{216} \checkmark$$

$$g) 2 : \frac{8}{5} - \frac{16}{3} : 4 = \frac{10}{8} - \frac{16}{12} = \frac{30}{24} - \frac{32}{24} = \frac{-2}{24} = \frac{-1}{12} \checkmark$$

$$h) \frac{1}{2} : 10 - 10 : \frac{1}{2} = \frac{1}{20} - \frac{20}{1} = \frac{1}{20} - \frac{400}{20} = \frac{-399}{20} \checkmark$$

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PAG. 28 ES. 56

$$56 - a) \frac{3}{4} - \frac{1}{4} \cdot \left( \frac{3}{5} - \frac{1}{10} \right) = \frac{3}{4} - \frac{1}{4} \cdot \frac{5}{10} = \frac{3}{4} - \frac{5}{40} = \frac{30}{40} - \frac{5}{40} = \frac{25}{40} = \frac{5}{8}$$

$$b) 5 + \frac{7}{3} : \left( \frac{3}{5} - \frac{1}{10} \right) = 5 + \frac{7}{3} : \frac{5}{10} = 5 + \frac{70}{15} = 5 + \frac{14}{3} = \frac{15}{3} + \frac{14}{3} = \frac{29}{3}$$

$$= 5$$

$$c) \frac{3}{8} - \frac{1}{4} : \left( \frac{2}{3} \cdot \frac{3}{4} \right) = \frac{3}{8} - \frac{1}{4} : \frac{6}{12} = \frac{3}{8} - \frac{12}{24} = \frac{9}{24} - \frac{12}{24} = \frac{-3}{24} = \frac{-1}{8}$$

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$$d) \frac{8}{3} - \left( \frac{1}{3} + \frac{1}{2} \right) : \frac{5}{4} = \frac{8}{3} - \frac{5}{6} : \frac{5}{4} = \frac{8}{3} - \frac{20}{30} = \frac{80}{30} - \frac{20}{30} = \frac{60}{30} = 2 \checkmark$$

$$e) \left( \frac{8}{3} - \frac{1}{3} + \frac{1}{2} \right) : \frac{5}{4} = \frac{51}{18} : \frac{5}{4} = \frac{204}{90} = \frac{102}{45}$$

$$g) \frac{8}{3} - \left( \frac{1}{3} + \frac{1}{2} : \frac{5}{4} \right) = \frac{8}{3} - \left( \frac{1}{3} + \frac{4}{10} \right) = \frac{8}{3} - \frac{22}{30} = \frac{58}{30} = \frac{29}{15}$$



PÁG. 79 EJ. 58

$$58 - a) \left(\frac{2}{3}\right)^2 - \left(\frac{1}{2}\right)^2 = \frac{4}{9} - \frac{1}{4} = \frac{16}{36} - \frac{9}{36} = \frac{7}{36} \checkmark$$

$$b) \left(\frac{3}{4} - \frac{5}{4} : 2\right)^3 = \left(\frac{3}{4} - \frac{5}{8}\right)^3 = \left(\frac{6}{8} - \frac{5}{8}\right)^3 = \left(\frac{1}{8}\right)^3 = \frac{1^3}{8^3} = \frac{1}{64} \checkmark$$

$\frac{2}{3} - \frac{1}{2}$

$$c) \left(\frac{2}{3}\right)^2 + \left(\frac{2}{3}\right)^2 = \frac{4}{9} + \frac{4}{9} = \frac{8}{9} \checkmark$$

$$d) \left(3 - \frac{7}{2}\right)^3 + 2^3 = \left(\frac{6}{2} - \frac{7}{2}\right)^3 + 8 = \left(\frac{-1}{2}\right)^3 + 8 = \frac{-1}{8} + \frac{64}{8} = \frac{63}{8}$$

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PÁG. 79 EJ. 59

$$59 - b) \left(1 - \frac{1}{3}\right)^3 - \left(1 + \frac{1}{3}\right)^3 = \left(\frac{2}{3} - \frac{1}{3}\right)^3 - \left(\frac{2}{3} + \frac{1}{3}\right)^3 = \left(\frac{1}{3}\right)^3 - \left(\frac{3}{3}\right)^3 = \frac{1}{27} - \frac{27}{27} = \frac{1 - 27}{27} = \frac{-26}{27} \checkmark$$

$$\frac{8}{27} - \frac{64}{27} = \frac{-56}{27} \checkmark$$

$$c) \left(1 - \frac{1}{2}\right) \cdot \left(1 - \frac{1}{3}\right)^2 - \frac{2}{3^2} = \left(\frac{1}{2} - \frac{1}{2}\right) \cdot \left(\frac{2}{3} - \frac{1}{3}\right)^2 - \frac{2}{9} = \frac{1}{2} \cdot \left(\frac{1}{3}\right)^2 - \frac{2}{9} = \frac{1}{2} \cdot \frac{1}{9} - \frac{2}{9} = \frac{1}{18} - \frac{4}{18} = \frac{1 - 4}{18} = \frac{-3}{18} = \frac{-1}{6}$$

$$\left(\frac{1}{2}\right) \cdot \left(\frac{2}{3}\right)^2 - \frac{2}{9} = \frac{1}{2} \cdot \frac{4}{9} - \frac{2}{9} = \frac{4}{18} - \frac{4}{18} = \frac{4 - 4}{18} = \frac{0}{18} = 0$$

PÁG. 81 EJ. 63, 64, 65, 66

63. DATOS

3600 habitantes

2/3 españoles

1/9 países europeos

1/9 africanos

el resto americanos

$$a) \frac{2}{3} + \frac{1}{9} + \frac{1}{9} = \frac{6}{9} + \frac{1}{9} + \frac{1}{9} = \frac{8}{9}$$

R: 1/9 son americanos.

$$b) 1/9 \text{ de } 3600 = \frac{1 \cdot 3600}{9} = \frac{3600}{9} = 400$$

$$\begin{array}{r} R: 400 \text{ americanos} \\ 3600 \\ - 800 \\ \hline 2800 \end{array}$$



### 64- DATOS

8 h durmiendo  $\rightarrow 8/24$

2 h comiendo  $\rightarrow 2/24$

6 h en el colegio  $\rightarrow 6/24$

$$\underline{\hspace{1cm}}$$
$$16/24$$

R: Le quedan 8h que son 8/24

### 65- DATOS

3/16 Ana

5/24 David

$$a) \frac{3}{16} = \frac{9}{48}$$

$$\frac{5}{24} = \frac{10}{48}$$

R: Ella trabajada más David

$$b) 3/16 \text{ de } 96 = \frac{3 \cdot 96}{16} = \frac{288}{16} = 18$$

R: Ella trabajada más David

$$5/24 \text{ de } 96 = \frac{5 \cdot 96}{24} = \frac{480}{24} = 20$$

$$c) 1440 : 96 = 15 \text{ € por hora}$$

$$15 \cdot 18 = 270 \quad 15 \cdot 20 = 300$$

R: Ella cobrada más David

### 66- DATOS

Mayor 1/2

Mediano 1/3

Pequeño 1/9

$$a) \frac{1}{2} + \frac{1}{3} + \frac{1}{9} = \frac{9}{18} + \frac{6}{18} + \frac{2}{18} = \frac{17}{18}$$

R: No, no ha repartido toda la herencia

$$b) 17/18 \text{ de } 1800 = \frac{17 \cdot 1800}{18} = \frac{30600}{18} = 1700$$

R: Los otros hermanos se llevaron 1700 €

Mary Cartwright