Guia de matematica

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Mantenimiento de los
motores diesel

PRACTICA

1 Escribe como numero racional cada una de las siguientes divisiones.

a) $2 \div 7$ R
$\frac{2}{7}$

b) $5 \div 9$ R
$\frac{5}{9}$

c) $11 \div 3$ R
$\frac{11}{3}$

d) $18 \div 13$ R
$\frac{18}{13}$

e) $8 \div (-27)$ Z
$\frac{8}{27}$

f) $9 \div 16$ Z
$\frac{9}{16}$

g) $25 \div (-3)$ Z
$\frac{25}{3}$

H) $-49 \div (-22)$ Z
$\frac{49}{22}$

i) $2 \div 4$ Z
$\frac{2}{4}$

J) $14 \div 20$ Z
$\frac{14}{20}$

K) $-30 \div (-45)$ Z
$\frac{30}{45}$

L) $-27 \div 15$ Z
$\frac{27}{15}$

M) $42 \div (-36)$ Z
$\frac{42}{36}$

N) $81 \div 27$ N
$\frac{81}{27} = \frac{27}{9} \quad \frac{9}{3} \quad \frac{3}{1} = 3$

O) $-100 \div 25$ N
$\frac{100}{25} \quad \frac{4}{1} \quad 4$

2 identifica en cada grupo de fracciones los numeros racionales:

a) $\frac{18}{3}$ N 1, $\frac{9}{4}$ R, $\frac{35}{14}$ R, $\frac{8}{24}$ R

b) $-\frac{5}{21}$ R, $\frac{4}{10}$ R, $\frac{2}{7}$ R, $\frac{11}{33}$ R, $-\frac{36}{72}$ R

c) $\frac{18}{35}$ R, $\frac{39}{26}$ R, $\frac{34}{17}$ N 1, $-\frac{38}{57}$ R, $-\frac{43}{84}$ R

d) $\frac{9}{12}$ R, $\frac{5}{13}$ R, $\frac{12}{81}$ R, $\frac{38}{69}$ R, $-\frac{51}{22}$ R

e) $\frac{25}{10}$ R, $-\frac{4}{18}$ R, $\frac{18}{25}$ R, $\frac{27}{8}$ R, $-\frac{15}{14}$ R

f) $\frac{13}{39}$ R, $\frac{12}{15}$ R, $-\frac{9}{14}$ R, $\frac{23}{46}$ R, $-\frac{34}{39}$ R

g) $-\frac{32}{15}$ R, $\frac{8}{27}$ R, $\frac{15}{9}$ R, $-\frac{36}{49}$ R, $\frac{42}{35}$ R

H) $\frac{24}{17}$ 17 1 N, $-\frac{15}{36}$ R, $\frac{17}{4}$ R, $\frac{19}{38}$ R, $-\frac{4}{7}$ R

i) $\frac{28}{9}$ R, $\frac{35}{48}$ R, $\frac{25}{100}$ R 4, $\frac{14}{3}$ R, $\frac{20}{18}$ R

j) $\frac{-12}{39}, \frac{25}{42}, \frac{-28}{9}, \frac{15}{40}, -\frac{13}{29}$

APRENDIZAJE ACTIVO

2 Hallar el factor de amplificación y el termino que falto para obtener una fraccion equivalente con $\frac{7}{4} = -\frac{\square}{36}$

R/ $\frac{7^{9}}{4^{9}} = -\frac{63}{36}$

PRACTICA 18

1 Halla cinco fracciones equivalentes con el número racional dado en donde los factores sean 3, 7, 9, 12, y 21.

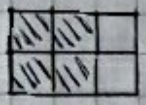
a) $\frac{3}{5}$ b) $\frac{3}{4}$ c) $-\frac{10}{13}$ d) $-\frac{11}{5}$

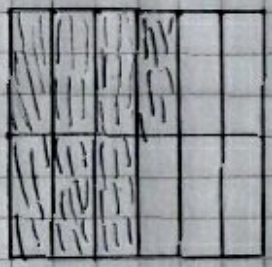
	3	7	9	12	21
$\frac{3}{5}$	$\frac{9}{15}$	$\frac{21}{35}$	$\frac{27}{35}$	$\frac{36}{60}$	$\frac{63}{105}$
$\frac{3}{4}$	$\frac{9}{12}$	$\frac{21}{28}$	$\frac{27}{36}$	$\frac{36}{48}$	$\frac{63}{84}$
$-\frac{10}{13}$	$-\frac{30}{39}$	$-\frac{70}{91}$	$-\frac{90}{117}$	$-\frac{120}{156}$	$-\frac{210}{273}$
$-\frac{11}{5}$	$-\frac{33}{15}$	$-\frac{77}{35}$	$-\frac{99}{45}$	$-\frac{132}{60}$	$-\frac{231}{105}$

2 Halla el factor de amplificacion y la fraccion equivalente en cada caso

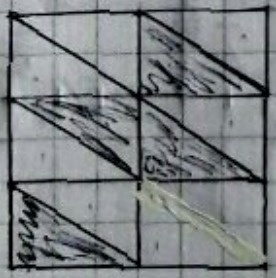
2/1 c $\frac{11^{8}}{9^{8}} = \frac{\boxed{88}}{72}$ D) $\frac{2^{3}}{15^{3}} = \frac{\boxed{6}}{45}$

3 Escribe la fraccion representada en cada una de las siguientes graficas.

a  $\frac{4}{6}$

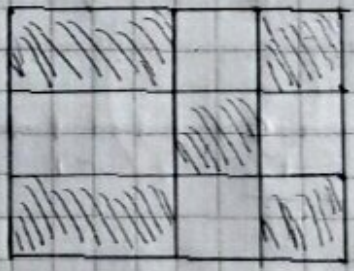
b  $\frac{7}{12}$

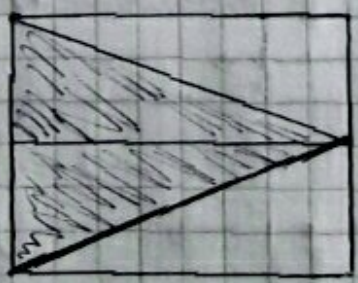
c  $\frac{3}{8}$

d  $\frac{4}{12}$

e  $\frac{1}{7}$

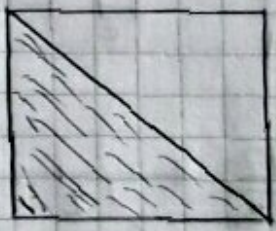
f  $\frac{1}{7}$

g  $\frac{7}{12}$

h  $\frac{2}{4}$

i)  $\frac{7}{24}$

J  $\frac{1}{4}$

K  $\frac{1}{2}$

L  $\frac{13}{32}$

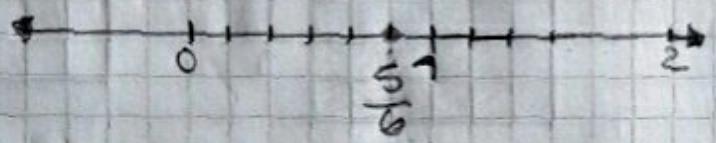
PRACTICA 20

1 Representa en la recta numérica cada uno de los siguientes racionales

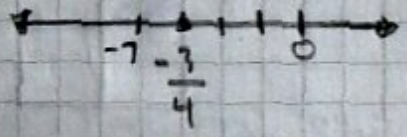
a $\frac{5}{6}$ b $-\frac{3}{4}$ c $\frac{12}{4}$ d $-\frac{17}{12}$ e $\frac{9}{2}$ f $-\frac{8}{4}$ g $\frac{8}{3}$ h $\frac{1}{2}$

i $-\frac{4}{3}$ j $\frac{0}{12}$

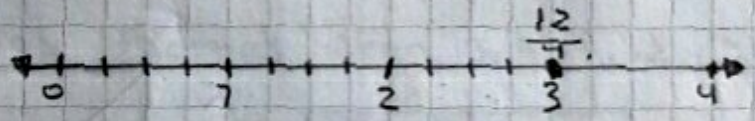
1/ a $\frac{5}{6}$



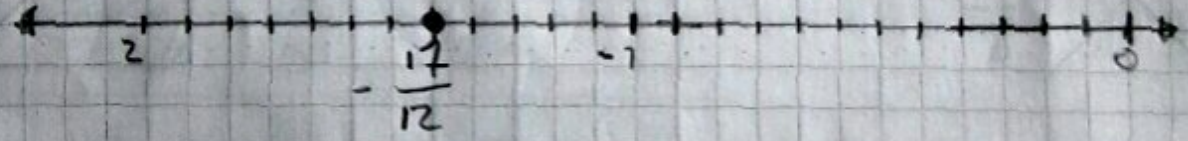
b) $-\frac{3}{4}$



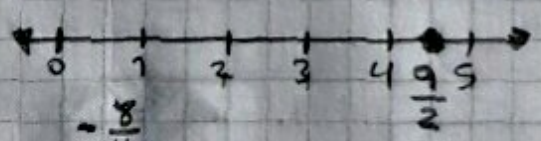
c) $\frac{12}{4}$



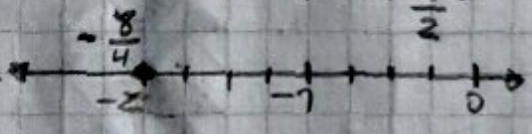
d) $-\frac{17}{12}$



e $\frac{9}{2}$



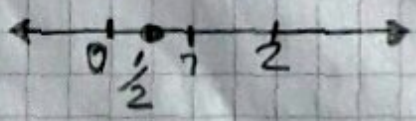
f $-\frac{8}{4}$



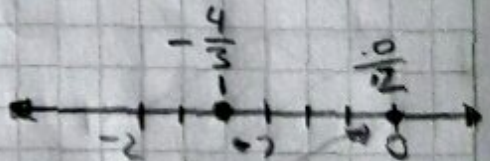
g $\frac{8}{3}$



h $\frac{1}{2}$

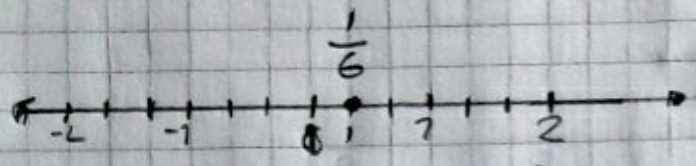


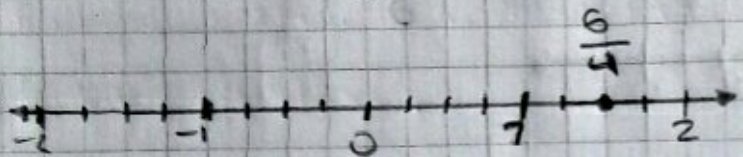
I/ $-\frac{4}{3}$

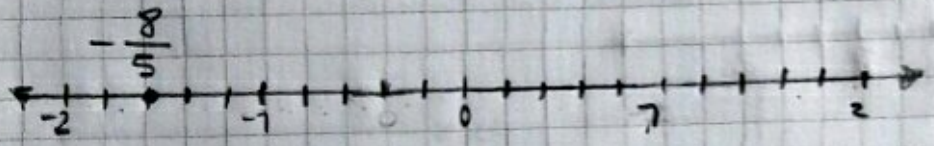


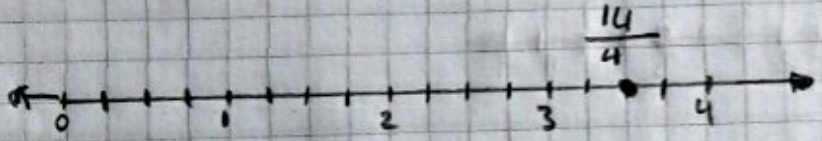
J $\frac{0}{12}$

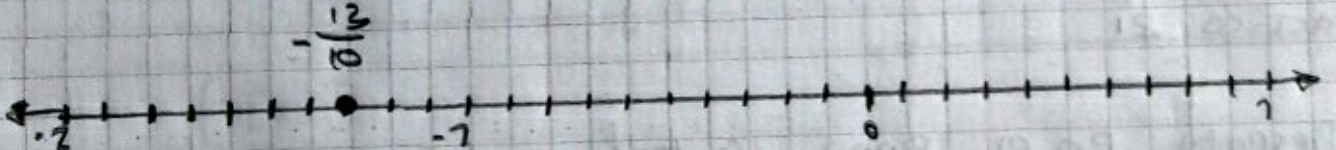
2 Escribe el numero racional que se representa en cada opcta numerica

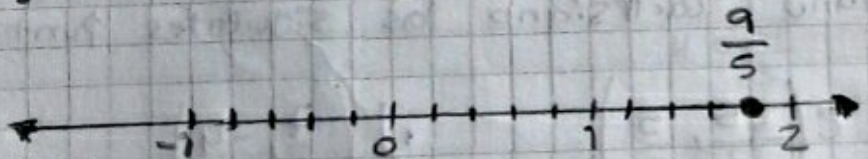
a) 

b) 

c) 

d) 

e) 

f) 

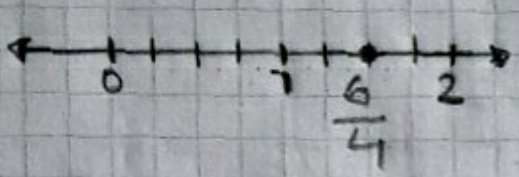
1 integracion cognitiva

completa la tabla indicando si el numero dado es una racional o una fraccion equivalente y si es positivo o negativo

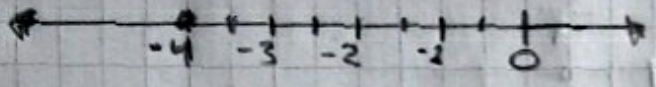
Fraccion	$\frac{2}{7}$	$\frac{-9}{5}$	$\frac{-3}{-4}$	$\frac{12}{-6}$
Racional	R	R	R	
fequivalente				E
+	+		+	
−		−		−

2 Representa sobre la recta numerica las siguientes fracciones a) $\frac{6}{4}$ b) $-\frac{8}{2}$ c) $\frac{1}{3}$ d) $\frac{9}{3}$

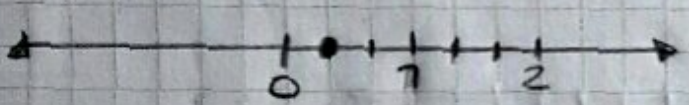
2/ a) $\frac{6}{4}$



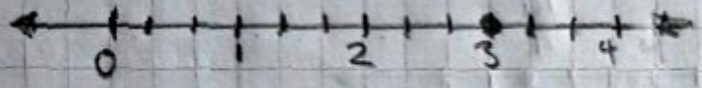
b) $-\frac{8}{2}$



c) $\frac{1}{3}$



d) $\frac{9}{3}$



PRACTICA 21

Representa en el plano cartesiano las siguientes punto.

a) $\left(\frac{2}{3}, \frac{5}{3}\right)$ (x, y)

b) $\left(\frac{3}{4}, \frac{7}{2}\right)$ (x, y)

c) $\left(-\frac{7}{6}, -\frac{1}{6}\right)$ (x, y)

d) $\left(-\frac{9}{4}, -\frac{9}{8}\right)$ (x, y)

e) $\left(-\frac{5}{2}, \frac{5}{2}\right)$ (x, y)

f) $\left(\frac{8}{5}, -\frac{13}{10}\right)$ (x, y)

g) $\left(-\frac{7}{3}, \frac{5}{2}\right)$ (x, y)

h) $\left(0, \frac{4}{3}\right)$ (x, y)

i) $\left(\frac{7}{8}, -4\right)$ (x, y)

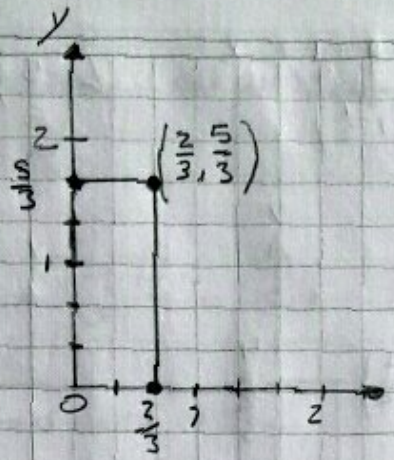
j) $\left(\frac{10}{3}, -\frac{1}{2}\right)$ (x, y)

k) $\left(-\frac{3}{4}, \frac{7}{2}\right)$ (x, y)

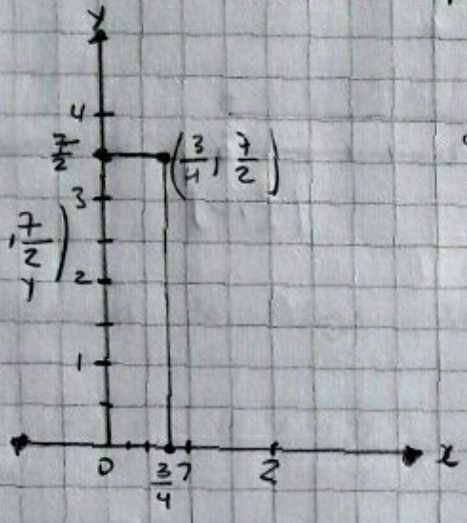
l) $\left(\frac{5}{6}, 0\right)$ (x, y)

Score

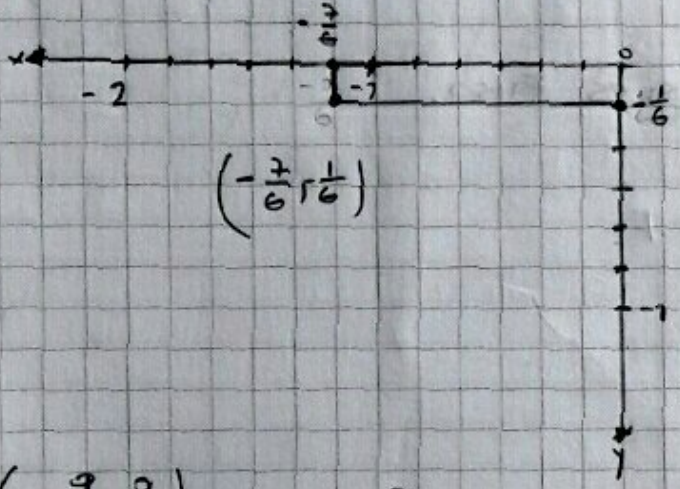
a) $\left(\frac{2}{3}, \frac{5}{3}\right)$



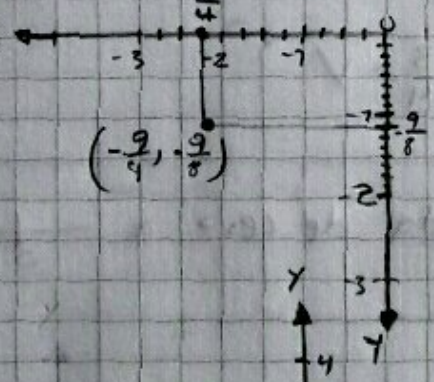
b) $\left(\frac{3}{4}, \frac{7}{2}\right)$



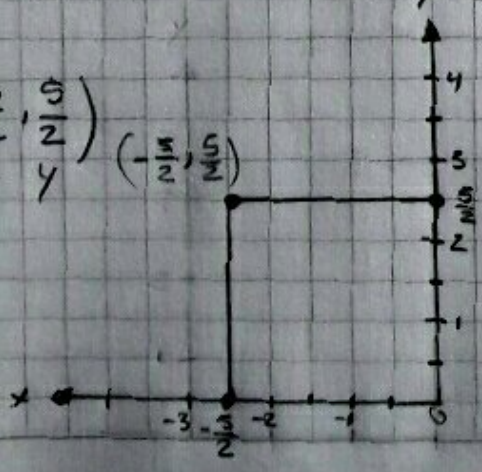
c) $\left(-\frac{7}{6}, \frac{1}{6}\right)$



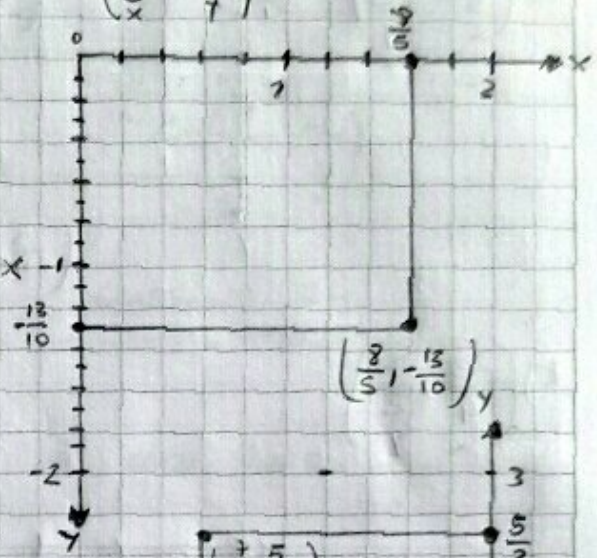
d) $\left(-\frac{9}{4}, -\frac{9}{8}\right)$



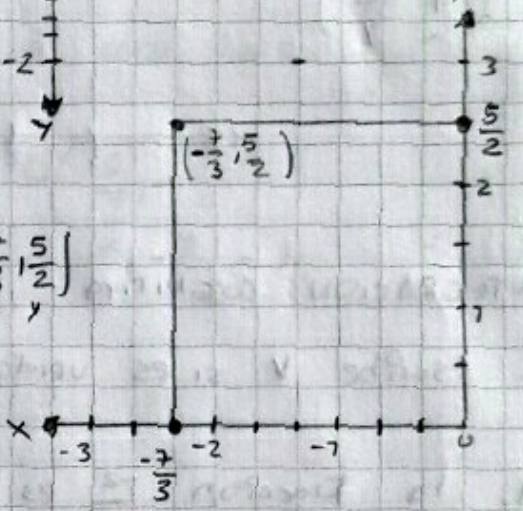
e) $\left(-\frac{5}{2}, \frac{5}{2}\right)$



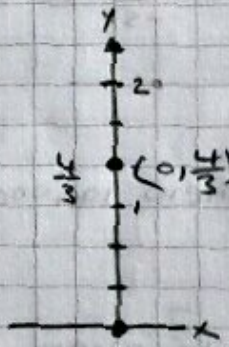
f) $\left(\frac{8}{5}, -\frac{13}{10}\right)$



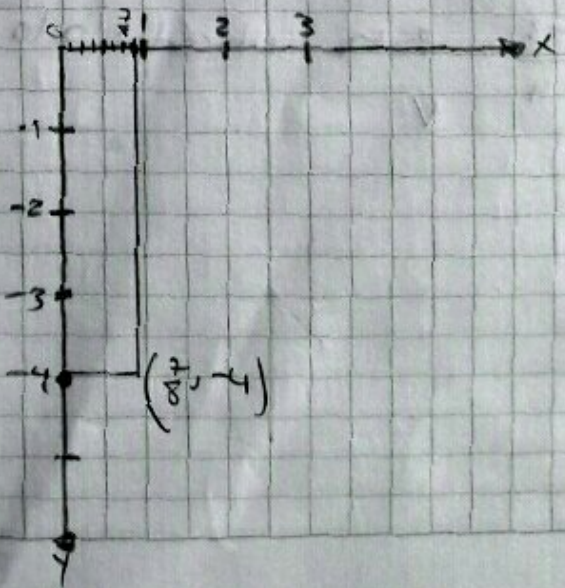
g) $\left(-\frac{7}{3}, \frac{5}{2}\right)$



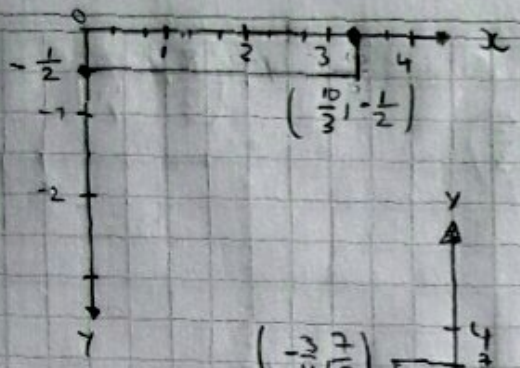
h) $\left(0, \frac{4}{3}\right)$



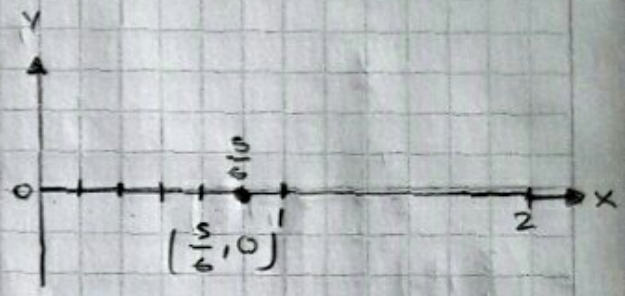
i) $\left(\frac{7}{8}, -4\right)$



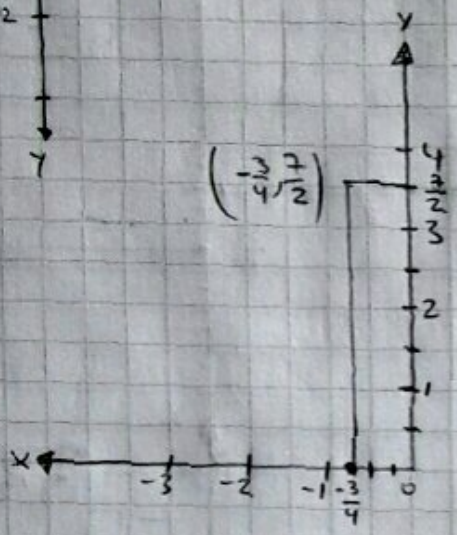
J) $\left(\frac{10}{3}, -\frac{1}{2}\right)$



L) $\left(\frac{5}{6}, 0\right)$



K) $\left(-\frac{3}{4}, \frac{7}{2}\right)$



INTEGRACION COGNITIVA

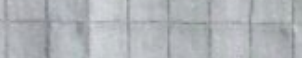
1. Escribe V si es verdadero o F si es falso.

a. la Fraccion $\frac{-2}{-5}$ es negativa = F

b $\frac{12}{15}$ es un numero racional = V

c $\frac{-9}{-12}$ es un equivalente al racional $\frac{3}{4}$ = V

d $\frac{-3}{-4}$ esta ubicado a la izquierda de cero = F



2 DETERMINE EL CUADRANTE EN EL QUE QUEDAN UBICADOS LAS SIGUIENTES PAREJAS

a $\left(\frac{1}{3}, \frac{2}{5}\right)$ (x +, y +) CUADRANTE N 1

B $\left(-3, \frac{5}{4}\right)$ (x −, y +) CUADRANTE N 2

C $\left(\frac{8}{5}, -4\right)$ (x +, y −) CUADRANTE N 4

3 DETERMINA LA PAREJA QUE CORRESPONDE A CADA PUNTO

a $(3, -2)$ (x, y)

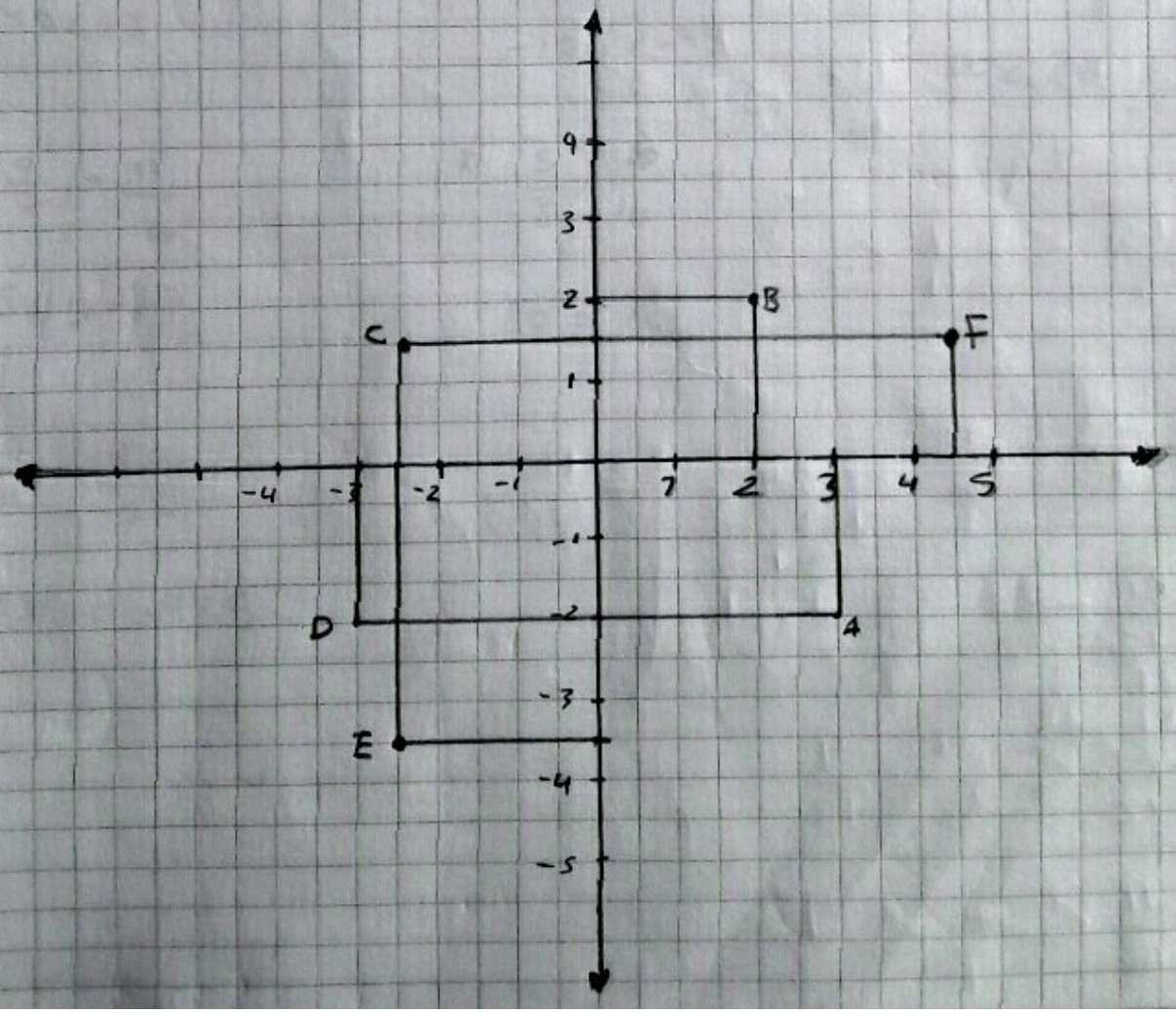
b $(2, 2)$ (x, y)

c $\left(-\frac{5}{2}, -\frac{7}{2}\right)$ (x, y)

d $\left(-\frac{6}{2}, -\frac{4}{2}\right)$ (x, y)

e $\left(-\frac{5}{2}, -\frac{7}{2}\right)$ (−, y)

f $\left(\frac{9}{2}, \frac{3}{2}\right)$ (x, y)

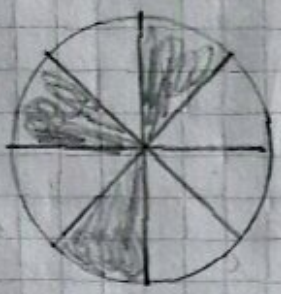


4 Escribe el racional que determina cada dibujo

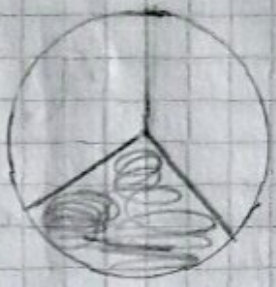
a)



$\frac{2}{4}$



$\frac{3}{8}$



$\frac{1}{3}$

PRACTICA. 22

1 Relaciona cada para de fracciones con los signos =, >o< segun corresponda.

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

$10 > 6$

b) $\frac{3}{7}, \frac{6}{7}$

$21 < 42$

c) $-\frac{5}{4}, \frac{7}{8}$

$-40 < 28$

d) $-\frac{7}{9}, \frac{63}{81}$

$-567 < 567$

e) $-\frac{4}{7}, -\frac{4}{15}$

$-60 < -28$

f) $-\frac{8}{11}, -\frac{9}{13}$

$-104 < -99$

g) $\frac{4}{17}, \frac{9}{31}$

$124 < 153$

h) $-\frac{8}{25}, -\frac{4}{17}$

$-136 < -68$

i) $\frac{4}{4}, -\frac{7}{5}$

$20 < 28$

j) $-\frac{9}{7}, -\frac{11}{6}$

$-54 > -77$

k) $\frac{5}{8}, \frac{10}{16}$

$80 = 80$

l) $-\frac{17}{11}, -\frac{85}{55}$

$-935 = -935$

2 ordena de menor a mayor los siguientes numeros racionales

a) $\frac{4}{5}, -\frac{2}{3}, \frac{7}{2}, -\frac{9}{10}$

2 3 5 10	2
1 3 5 5	3
1 5 5	5
1 1	

$2 \times 3 \times 5 = 30$

$\frac{24}{30}, -\frac{20}{30}, \frac{105}{30}, -\frac{27}{30}$

$-\frac{27}{30} < -\frac{20}{30} < \frac{24}{30} < \frac{105}{30} = -\frac{9}{10} < -\frac{2}{3} < \frac{4}{5} < \frac{7}{2}$

b) $-\frac{7}{12}, -\frac{9}{4}, -\frac{13}{5}, -\frac{11}{2}$

2 4 5 12	2
1 2 5 6	2
1 5 3	3
5 1	5
1	

$4 \times 3 \quad 12 \times 5 = 60$

$-\frac{35}{60}, -\frac{135}{60}, -\frac{156}{60}, -\frac{330}{60}$

$-\frac{330}{60} < -\frac{156}{60} < -\frac{135}{60} < -\frac{35}{60}$

$-\frac{11}{2} < -\frac{13}{5} < -\frac{9}{4} < -\frac{7}{12}$

c) $-\frac{1}{3}, -\frac{7}{4}, -\frac{9}{2}, -\frac{11}{6}$

2 3 4 6	2
1 3 2 3	2
3 1 3	3
1 1	

$4 \times 3 = 12$

$-\frac{4}{12}, -\frac{21}{12}, -\frac{54}{12}, -\frac{22}{12}$

$-\frac{54}{12} < -\frac{22}{12} < -\frac{21}{12} < -\frac{4}{12}$

$-\frac{9}{2} < -\frac{11}{6} < -\frac{7}{4} < -\frac{7}{3}$

d) $\frac{5^{9}}{2}, -\frac{7^{6}}{3}, \frac{4^{2}}{9}, -\frac{5^{3}}{6}$

2	3	6	9
1	3	3	9
	1	1	3
			1

2 × 3 × 3 = 18

$\frac{45}{18} - \frac{42}{18} - \frac{8}{18} - \frac{15}{18}$

$\frac{42}{18} < -\frac{15}{18} < -\frac{8}{18} < \frac{45}{18}$

$-\frac{7}{3} < -\frac{5}{6} < -\frac{4}{9} < \frac{5}{2}$

3 ordena en forma decendente los siguientes racionales

a) $\frac{5^{8}}{3}, -\frac{5^{12}}{2}, \frac{5^{3}}{8}, -\frac{5^{2}}{12}$

2	3	8	12	2
1	3	4	6	2
	3	2	3	2
	3	1	3	3
	1		1	

8 × 3 = 24

$\frac{40}{24} - \frac{60}{24} \frac{15}{24} - \frac{10}{24}$

$\frac{40}{24} > \frac{15}{24} > -\frac{10}{24} > -\frac{60}{24}$

$\frac{5}{3} > \frac{5}{8} > -\frac{5}{12} > -\frac{5}{2}$

b) $-\frac{12}{5}, \frac{17^{5}}{9}, \frac{28^{3}}{15}, -\frac{16}{3}$

3	5	9	15
1	5	3	5
	5	1	5
	1		1

3 × 3 × 5 = 45

$-\frac{108}{45} \quad \frac{85}{45} \quad \frac{84}{45} \quad -\frac{240}{45}$

$\frac{85}{45} > \frac{84}{45} > -\frac{108}{45} > -\frac{240}{45}$

$\frac{17}{9} > \frac{28}{15} > -\frac{12}{5} > -\frac{16}{3}$

c $-\frac{3}{4}, \frac{5}{2}, -\frac{3}{8}, \frac{11}{6}$ (×6, ×12, ×3, ×4)

2	4	6	8	2
1	2	3	4	2
	1	3	2	2
		3	1	3
			1	

24

$-\frac{18}{24} \quad \frac{60}{24} \quad -\frac{9}{24} \quad \frac{44}{24}$

$\frac{60}{24} > \frac{44}{24} > -\frac{18}{24} > -\frac{9}{24}$

$\frac{5}{2} > \frac{11}{6} > -\frac{18}{24} > -\frac{9}{24}$

d $\frac{7}{6}, -\frac{7}{2}, \frac{9}{4}, \frac{15}{8}$ (×4, ×12, ×6, ×3)

2	4	6	8	2
1	2	3	4	2
	1	3	2	2
		3	1	3
			1	

24

$\frac{28}{24} \quad -\frac{84}{24} \quad \frac{54}{24} \quad \frac{45}{24}$

$\frac{54}{24} > \frac{45}{24} > \frac{28}{24} > -\frac{84}{24}$

$\frac{9}{4} > \frac{15}{24} > \frac{7}{6} > -\frac{7}{2}$

e $\frac{7}{4}, \frac{19}{12}, \frac{13}{9}, \frac{22}{23}$ (×202, ×69, ×92, ×36)

$\frac{1449}{828} \quad \frac{1311}{828} \quad \frac{1196}{828} \quad \frac{792}{828}$

4	9	12	23	2
2	9	6	23	2
1	9	3	23	3
	3	1	23	3
	1		23	23
			1	

$\frac{7}{4} > \frac{19}{12} > \frac{13}{9} > \frac{22}{23}$

f. $-\frac{11}{8}, -\frac{17}{4}, -\frac{23}{2}, -\frac{31}{16}$

$-\frac{22}{16}, -\frac{68}{16}, -\frac{184}{16}, \frac{31}{16}$

2	4	8	16	2
1	2	4	8	2
	1	2	4	2
		1	2	2
			1	

16

$\frac{-22}{16}, -\frac{31}{16}, -\frac{68}{16}, -\frac{184}{16}$

$-\frac{11}{8} > -\frac{31}{16} > -\frac{17}{4} > -\frac{23}{2}$

g. $\frac{7}{10}, -\frac{8}{5}, -\frac{3}{2}, -\frac{7}{3}$

$\frac{21}{30}, -\frac{48}{30}, -\frac{45}{30}, -\frac{70}{30}$

2	3	5	10	2
1	3	5	5	3
	1	5	5	5
		1	1	

30

$\frac{21}{30} > -\frac{45}{30} > -\frac{48}{30} > -\frac{70}{30}$

$\frac{7}{10} > -\frac{3}{2} > -\frac{8}{5} > -\frac{7}{3}$

H. $-\frac{9}{20}, -\frac{7}{4}, -\frac{9}{5}, -\frac{21}{2}$

$-\frac{9}{20}, -\frac{35}{20}, -\frac{36}{20}, -\frac{210}{20}$

2	4	5	20	2
1	2	5	10	2
	1	5	5	5
		1	1	

20

$-\frac{9}{20} > -\frac{35}{20} > -\frac{36}{20} > -\frac{210}{20}$

$-\frac{9}{20} > -\frac{7}{4} > -\frac{9}{5} > -\frac{21}{2}$

PRACTICA. 23

1 Suma las siguientes fracciones.

a) $\frac{3}{4} + \frac{11}{4} = \frac{3+11}{4} = \frac{14}{4}$

b $\frac{5}{3} + \left(-\frac{4}{3}\right) = \frac{15-12}{3} = \frac{3}{3}$

c $\left(-\frac{7}{6}\right) + \left(-\frac{11}{6}\right) =$

$= \frac{(-7)+(-11)}{6} = \frac{-18}{6}$

d $\frac{3}{7} + \frac{11}{21}$

$\frac{3+21+7\times 11}{7\times 21}$

$= \frac{63+77}{147}$

$= \frac{140}{147}$

e $\frac{7}{2} + \left(-\frac{5}{6}\right)$

$\frac{7\times 6+(2\times -5)}{2\times 6}$

$= \frac{42-10}{12} = \frac{32}{12}$

f $\left(-\frac{3}{2}\right) + \left(-\frac{9}{5}\right)$

$= \frac{-3\times 5+2\times -9}{2\times 5}$

$= \frac{(-15)+(-18)}{10} = \frac{-33}{10}$

$\frac{-15-18}{10} = \frac{-33}{10}$

g $\left(-\frac{14}{9}\right) + \frac{5}{12}$

$= \frac{-168+45}{108}$

$\frac{-168+45}{108} = \frac{-123}{108}$

h $\left(-\frac{8}{4}\right)+\left(-\frac{9}{5}\right)$

$= \frac{(-40)+(-36)}{20}$

$= \frac{-40-36}{20} = \frac{-76}{20}$

$\left(-\frac{9}{14}\right)+\left(\frac{6}{21}\right)$

$= \frac{(-189)+(84)}{294}$

$= \frac{-189+84}{294} = \frac{-105}{294}$

2 Realiza las siguientes sumas con mas de dos sumandos

a) $\frac{3}{7}+\frac{5}{7}+\frac{6}{7} = \frac{3+5+6}{7} = \frac{14}{7}$

b) $\frac{3}{5}+\left(-\frac{2}{5}\right)+\frac{4}{5} =$

$\frac{3-2+4}{5} \quad \frac{7-2}{5} = \frac{5}{5}$

c $\frac{9}{4}+\frac{5}{4}+\left(-\frac{7}{4}\right) = \frac{9+5-7}{4}$

$= \frac{14-7}{4} = \frac{7}{4}$

d $-\frac{2}{9}+\left(-\frac{4}{9}\right)+\left(\frac{5}{9}\right)$

$= \frac{-2-4+5}{9}$

$= \frac{-11}{9}$

e $\frac{7}{9}+\frac{5}{18}+\frac{2}{3}$ (6)

39 18 | 2
39 9 | 3 > 18
13 3 | 3

$\frac{14}{18}+\frac{5}{18}+\frac{12}{18} = 1\frac{1}{18}$

$= \frac{31}{18}$

f $-\frac{1}{7}+\frac{3}{4}+\frac{5}{14}$

4	7	14	2
2	7	7	2
1	7	7	7
	1	1	

$\rangle$ 28

$\frac{-4}{28}+\frac{21}{28}+\frac{10}{28}=\frac{27}{28}$

g $\frac{2}{9}f\left(-\frac{1}{12}\right)+\frac{5}{18}$

9	12	18	2
9	6	9	2
9	3	9	3
3	1	3	3
1		1	

$\rangle$ 36

$\frac{8}{36}-\frac{3}{36}+\frac{10}{36}=$

$\frac{8-3+10}{36}=\frac{15}{36}$

h $-\frac{3}{13}f\left(\frac{15}{26}\right)+\frac{17}{65}$

13	26	65	2
13	13	65	5
13	13	13	13
1	1	1	

$\rangle$ 130

$-\frac{30}{130}-\frac{75}{130}+\frac{34}{130}$

$\frac{-30-75+34}{130}=\frac{-71}{130}$

Practica 24

Halla la diferencia entre los siguientes fracciones

a) $\frac{6}{5} - \frac{9}{5} = \frac{6-9}{5} = -\frac{3}{5}$

b) $\left(-\frac{3}{4}\right) - \left(-\frac{7}{4}\right) = \frac{-3+7}{4} = \frac{4}{4}$

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

d) $\left(\frac{5}{6}\right) - \frac{7}{9} = \frac{5\times 9 - 6\times 7}{6\times 9} = \frac{45-42}{54} = \frac{3}{54}$

e) $\left(\frac{1}{4}\right) - \left(-\frac{2}{3}\right) = \frac{1\times 3 - (-4\times 2)}{4\times 3} = \frac{3+8}{12} = \frac{11}{12}$

f) $\left(\frac{7}{8}\right) - \left(\frac{11}{6}\right) = \frac{56-88}{48} = -\frac{32}{48}$

g) $\frac{5}{12} - \left(\frac{9}{8}\right) = \frac{5\times 8 - (12\times 9)}{12\times 8} = \frac{40+108}{96} = \frac{148}{96}$

H) $\frac{5}{9} - \left(\frac{11}{27}\right) = \frac{5\times 27 - (9\times 11)}{9\times 27} = \frac{135+99}{243} = \frac{234}{243}$

i) $\left(-\frac{4}{5}\right) - \left(\frac{7}{3}\right)$

$= \frac{-4\times 3 - 5\times 7}{5\times 3} = \frac{-12-35}{15} = -\frac{47}{15}$

② Resuelvo los siguientes productos con mas de dos factores

a $\left(\frac{3}{2}\right)\left(\frac{2}{5}\right)\left(\frac{4}{5}\right) = \frac{24}{30}$

b $\left(\frac{10}{21}\right)\left(\frac{20}{15}\right)\left(\frac{6}{5}\right) = \frac{1200}{1575}$

c $\left(-\frac{7}{4}\right)\left(\frac{2}{14}\right)\left(\frac{3}{2}\right) = -\frac{42}{112}$

d $\left(-\frac{10}{9}\right)\left(\frac{15}{8}\right)\left(-\frac{16}{3}\right) = \frac{2400}{216}$

$= \frac{100}{9}$

e $\left(-\frac{3}{5}\right)\left(\frac{5}{6}\right)\left(\frac{12}{5}\right) = \frac{180}{150}$

f $\left(-\frac{4}{9}\right)\left(-\frac{27}{16}\right)\left(-\frac{2}{3}\right) = -\frac{216}{432}$

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

Practica

Simplifica las siguientes fracciones

a) $\dfrac{\frac{7}{8}-\frac{5}{6}+\frac{4}{9}}{\frac{9}{2}-\frac{7}{4}+\frac{8}{3}} =$

6 8 9	2
3 4 9	2
3 2 9	2
3 1 9	3
1 3	3
1	

$= 72$

2 3 4	2
1 3 2	2
3 1	3
1	

$= 12$

$\dfrac{63}{72}-\dfrac{60}{72}+\dfrac{32}{72}=\dfrac{35}{72}$

$\dfrac{54}{12}-\dfrac{21}{12}+\dfrac{32}{12}=\dfrac{65}{12}$

$= \dfrac{420}{4680} = \dfrac{7}{78}$

b) $\dfrac{\frac{5}{2}-\frac{2}{4}+\frac{1}{6}}{\frac{3}{5}+\frac{2}{7}-\frac{3}{1}} = \dfrac{\frac{20-4}{8}}{\frac{21+10}{35}} = \dfrac{\frac{16}{8}+\frac{1}{6}}{\frac{31}{35}-\frac{3}{1}} = \dfrac{\frac{96+8}{48}}{\frac{31-105}{35}} = \dfrac{\frac{104}{48}}{-\frac{74}{35}} =$

$= -\dfrac{3640}{3552}$

c $\dfrac{\frac{1}{1}+\frac{2}{3}-\frac{10}{3}}{\frac{6}{1}-\frac{4}{5}+\frac{1}{2}} = \dfrac{\frac{3+2}{3}=\frac{5}{3}-\frac{10}{3}=\frac{-5}{3}}{\frac{30-4}{5}=\frac{26}{5}+\frac{1}{2}=\frac{52+5}{10}=\frac{57}{10}} = -\frac{50}{177}$

i $\dfrac{-10-\frac{1}{4}}{-10\cdot\frac{7}{5}-3} = \dfrac{\frac{-10}{1}-\frac{1}{4}}{-10\cdot\frac{7}{5}-3} = \dfrac{\frac{-40-1}{4}=\frac{-41}{4}}{\frac{-70}{5}-\frac{3}{1}=\frac{-70}{5}-\frac{15}{5}} = \dfrac{-\frac{41}{4}}{-\frac{85}{5}} = \frac{205}{340}$ ✓

h $\dfrac{-\frac{3}{4}-\frac{1}{2}\cdot\frac{2}{1}}{\frac{5}{6}\cdot\frac{6}{3}+\frac{1}{2}=\frac{30}{18}+\frac{1}{2}} = \dfrac{-\frac{3}{4}-1=\frac{-3}{4}-\frac{1}{1}}{\frac{-60+18}{36}=\frac{-42}{36}} = \frac{252}{168}$

d $\dfrac{\frac{5}{6}-\frac{18}{6}-\frac{4}{6}}{\frac{1}{5}\cdot\frac{5}{2}+1} = \dfrac{-\frac{9}{6}\ \frac{3}{2}}{\frac{1}{2}+\frac{2}{2}} = \dfrac{\frac{3}{2}}{\frac{3}{2}}\cdot\frac{6}{6} = -1$ ✓

e $\dfrac{\frac{3}{8}\cdot\frac{4}{6}+1}{\frac{5}{3}+\frac{3}{5}+2} = \dfrac{\frac{12}{48}+\frac{2}{2}=\frac{24+96}{96}=\frac{120}{96}}{\frac{25+9}{15}=\frac{34}{15}+\frac{2}{1}\ \frac{34+30}{15}=\frac{64}{15}}$

$= \dfrac{1800}{6144}$

f $\dfrac{\frac{2}{7}\cdot\frac{14}{5}+3}{3-\frac{1}{4}\cdot\frac{4}{3}} = \dfrac{\frac{28}{35}+\frac{3}{1}}{\frac{12-1}{4}} = \dfrac{\frac{28+105}{35}}{\frac{11}{4}} = \dfrac{133}{35}\cdot\dfrac{4}{11} = \dfrac{532}{385}$

$= \dfrac{1596}{1540}$

g $\dfrac{3+\frac{1}{2}\cdot\frac{4}{7}}{1-\frac{10}{3}\cdot\frac{3}{2}} = \dfrac{\frac{3}{1}+\frac{2}{14}}{\frac{1}{1}-\frac{30}{6}} = \dfrac{\frac{42+2}{14}}{\frac{6-30}{6}} = \dfrac{\frac{44}{14}}{\frac{-24}{6}} = -\dfrac{294}{336}$