

$$4.80) a) \boxed{\frac{23}{44}} \circ \frac{33}{64}$$

$$b) \frac{52}{53} \circ \boxed{\frac{97}{98}}$$

$$4.81) \frac{\left(\frac{6}{5}\right)^3 \left(\frac{25}{36}\right)^4}{\left(\frac{5}{6}\right)^4} = \frac{\cancel{6}^3 \cdot \cancel{5}^1 \cdot \cancel{6}^4}{\cancel{5}^3 \cdot \cancel{6}^8 \cdot \cancel{5}^4} = \boxed{\frac{5}{6}}$$

$$4.82) \frac{2}{5} x : \text{hombres} \quad \frac{1}{3} m : \text{rubias} \quad \frac{1}{4} h : \text{rubios}$$

$$(a) \text{ cuantos m hay? } \frac{3}{5} x, \text{ osea que } \frac{1}{3} \left(\frac{3}{5}\right) = \frac{1}{5} x \text{ son chicos rubias}$$

$$\frac{1}{5} \left(\frac{1}{4}\right) = \frac{1}{10} x \text{ son chicos rubios.}$$

$$\frac{1}{5} + \frac{1}{10} = \frac{2}{10} + \frac{1}{10} = \boxed{\frac{3}{10}}$$

$$(b) \frac{3}{10} x = 36 \quad x = 12 \cdot 10$$

$$x = \boxed{120}$$

$$4.83) \text{ los factores positivos de 30: } 30, 1, 15, 2, 10, 3, 6, 5.$$

$$\frac{1}{30} + \frac{1}{15} + \frac{1}{2} + \frac{1}{10} + \frac{1}{3} + \frac{1}{6} + \frac{1}{5} + 1$$

$$\frac{\cancel{1}}{30} + \frac{\cancel{2}}{30} + \frac{\cancel{15}}{30} + \frac{\cancel{3}}{30} + \frac{\cancel{10}}{30} + \frac{\cancel{5}}{30} + \frac{\cancel{6}}{30} + \frac{\cancel{30}}{30} = \frac{72}{30} = \frac{24}{10} = \boxed{\frac{12}{5}}$$

$$4.84) \frac{2+4+6+\dots+36}{3+6+9+\dots+54} = \frac{2(1+2+\dots+18)}{3(1+2+\dots+18)} = \boxed{\frac{2}{3}}$$

$$4.85) -2\frac{5}{6} \text{ y } \frac{3}{5}. \quad -2 - \frac{5}{6} + \frac{3}{5} = -2 - \frac{25}{30} + \frac{18}{30}$$

$$= \left(-2 - \frac{7}{30}\right) \div 2 = -1 - \frac{7}{60}$$

$$4.86) \frac{200+240}{1200} = \frac{440}{1200} = \frac{44}{120} = \boxed{\frac{11}{30}}$$

$$= -1\frac{7}{60}$$

$$\frac{\frac{1}{3}x + \frac{2}{5}x}{2x} = \frac{\frac{11}{15}}{2} = \frac{11}{30} \text{ misma respuesta...}$$

4.87)  $\frac{1}{2}x \dots \frac{1}{3}(\frac{1}{2}x) \dots$

$\frac{1}{2}x \dots \frac{1}{2}x \dots$  ha subido  $\frac{3}{6}x + \frac{1}{6}x = \frac{4}{6}x = \frac{2}{3}x$

le falta  $\frac{1}{3}x$ .  $\frac{1}{8}(\frac{1}{3}x) = \frac{1}{24}x$ . El entero más pequeño que hace la expresión entera es 24.

4.88)

(a)  $1 + \frac{1}{2 + \frac{1}{2}} = 1 + \frac{1}{\frac{5}{2}} = \frac{2}{5} + \frac{5}{5} = \frac{7}{5}$

$(\frac{7}{5})^2 = \frac{49}{25} - 2$

$= \frac{49}{25} - \frac{50}{25}$

$= -\frac{1}{25}$

(b)  $1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}$

$1 + \frac{1}{2 + \frac{2}{5}} = 1 + \frac{1}{\frac{12}{5}}$

$= 1 + \frac{5}{12} = \frac{17}{12}$

$(\frac{17}{12})^2 = \frac{289}{144} - \frac{288}{144} = \frac{1}{144}$

(c)  $1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}}} = 1 + \frac{1}{\frac{24}{12} + \frac{5}{12}}$

$= \frac{24}{24} + \frac{12}{24} = (\frac{41}{24})^2 = \frac{1681}{576} - \frac{1682}{576}$

$= -\frac{1}{576}$

$$\begin{array}{r} 41 \\ \times 41 \\ \hline 41 \\ 164 \\ \hline 1681 \end{array}$$

$$\begin{array}{r} 1 \\ 8 \\ 29 \\ \times 29 \\ \hline 261 \\ 58 \\ \hline 841 \end{array}$$

4.89) L, M, N, O

$\frac{1}{5}M = \frac{1}{4}L = \frac{1}{3}N$

$0 = \frac{1}{5}M + \frac{1}{5}M + \frac{1}{5}M$

$0 = \frac{3}{5}M$

$\frac{1}{5}M = 0$

$\frac{1}{4}L = 0$

$\frac{1}{3}N = 0$

Total = L + M + N + O

$= \frac{4}{5}M + \frac{5}{5}M + \frac{3}{5}M +$

$= \frac{12}{5}M$

$\frac{\frac{3}{5}}{12/5} = \frac{1}{4}$

4.90)

$$(a) \quad \frac{1}{a} + \frac{1}{b} = \frac{1}{2}$$

$$\boxed{3, 6}$$

$$\frac{1}{3} + ? = \frac{1}{2}$$

$$\frac{1}{2} - \frac{1}{3} = \frac{3-2}{6} = \frac{1}{6}$$

$$(b) \quad \frac{1}{a} + \frac{1}{b} = \frac{1}{3}$$

$$\boxed{4, 12}$$

$$\frac{1}{4} + ? = \frac{1}{3}$$

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

$$(c) \quad \frac{1}{a} + \frac{1}{b} = \frac{1}{4}$$

$$\frac{1}{5} + ? = \frac{1}{4}$$

$$? = \frac{1}{4} - \frac{1}{5}$$

$$\boxed{5, 20}$$

$$= \frac{5-4}{20} = \frac{1}{20}$$

$$(d) \quad \boxed{6, 30}$$

$$(e) \quad 7, 42$$

(f)  $(n+1)$  y  $n(n+1)$  . la suma del recíproco de estos números es  $\frac{1}{n}$