

$$\textcircled{1} \text{ a) } \frac{3}{5} \cdot \frac{1}{4} - \frac{5}{6} : \frac{4}{3} = \frac{3}{20} - \frac{15}{24} = \frac{18-75}{120} = \frac{-57}{120} = \frac{-19}{40}$$

$$\text{b) } \frac{1}{25} + \frac{3}{5} - \frac{6}{9} : \frac{14}{12} = \frac{1}{25} + \frac{3}{5} - \frac{6 \cdot 12}{9 \cdot 14} =$$

$$\frac{1}{25} + \frac{3}{5} - \frac{\cancel{2} \cdot \cancel{3} \cdot 2 \cdot 2 \cdot \cancel{3}}{\cancel{3} \cdot \cancel{3} \cdot 2 \cdot 7} = \frac{1}{25} + \frac{3}{5} - \frac{4}{7} =$$

$$\frac{7 + 35 \cdot 3 - 25 \cdot 4}{175} = \frac{7 + 105 - 100}{175} = \frac{12}{175}$$

$$\text{c) } \left(\frac{3}{5} \cdot \frac{1}{2} - \frac{5}{6} \right) : \frac{1}{3} = \left(\frac{3}{10} - \frac{5}{6} \right) : \frac{1}{3} = \frac{9-25}{30} : \frac{1}{3} =$$

$$\frac{-16}{30} : \frac{1}{3} = \frac{-16 \cdot 3}{30} = \frac{-8}{5}$$

$$\text{d) } \frac{3}{5} \cdot \left(\frac{1}{2} - \frac{5}{13} \right) : \frac{1}{5} = \frac{3}{5} \cdot \frac{13-10}{26} : \frac{1}{5} = \frac{3}{5} \cdot \frac{3}{26} : \frac{1}{5} =$$

$$\frac{9}{130} : \frac{1}{5} = \frac{45}{130} = \frac{9}{26}$$

$$\text{e) } 2 + \frac{3}{4} - \left(\frac{5}{6} + \frac{7}{12} \right) - \frac{1}{3} = 2 + \frac{3}{4} - \frac{10+7}{12} - \frac{1}{3}$$

$$= 2 + \frac{3}{4} - \frac{17}{12} - \frac{1}{3} = \frac{24+9-17-4}{12} = 1$$

$$\text{f) } \left(\frac{2}{3} \right)^3 - \left(\frac{2}{3} \right)^{-1} = \frac{8}{27} - \frac{3}{2} = \frac{16-81}{54} = \frac{-65}{54}$$

$$\text{g) } \frac{40}{18} \cdot \frac{9}{30} - \left(2 - \frac{3}{2} \right)^2 = \frac{2}{3} - \left(\frac{1}{2} \right)^2 = \frac{2}{3} - \frac{1}{4} =$$

$$\frac{8-3}{12} = \frac{5}{12}$$

$$h) \frac{3}{10} \cdot \left(\frac{1}{7} - \frac{5}{12}\right)^{-1} : \left(\frac{1}{4} \cdot \frac{2}{5}\right) = \frac{3}{10} \cdot \left(\frac{12-35}{84}\right)^{-1} : \left(\frac{1}{4} \cdot \frac{2}{5}\right) =$$

$$\frac{3}{10} \cdot \left(-\frac{23}{84}\right)^{-1} : \left(\frac{1}{4} \cdot \frac{2}{5}\right) = -\frac{3}{10} \cdot \frac{84}{23} : \left(\frac{1}{4} \cdot \frac{2}{5}\right) =$$

$$-\frac{3 \cdot 84}{10 \cdot 23} : \left(\frac{1}{4} \cdot \frac{2}{5}\right) = \frac{-3 \cdot 84 \cdot 4}{10 \cdot 23 \cdot 1} : \frac{2}{5} =$$

$$\frac{-3 \cdot 84 \cdot 2 \cdot 2 \cdot 5}{10 \cdot 2 \cdot 23} = \frac{-252}{23}$$

$$\textcircled{2} \quad a) \frac{5}{12} + \frac{1}{3} \cdot \left[2 - \left(\frac{3}{4} + \frac{4}{6}\right)\right] - \left(\frac{1}{2}\right)^2 =$$

$$\frac{5}{12} + \frac{1}{3} \cdot \left[2 - \frac{9+8}{12}\right] - \frac{1}{4} = \frac{5}{12} + \frac{1}{3} \cdot \frac{24-17}{12} - \frac{1}{4} =$$

$$\frac{5}{12} + \frac{7}{36} - \frac{1}{4} = \frac{15+7-9}{36} = \frac{13}{36}$$

$$b) \left(\frac{9}{8} - \frac{1}{4}\right)^2 + \left(\frac{5}{2} + 2\right) \left(1 - \frac{3}{4}\right) = \left(\frac{9-2}{8}\right)^2 + \frac{9}{2} \cdot \frac{1}{4} =$$

$$\left(\frac{7}{8}\right)^2 + \frac{9}{8} = \frac{49}{64} + \frac{9}{8} = \frac{49+72}{64} = \frac{121}{64}$$

$$c) \frac{8}{5} - \frac{1}{5} : \left[2 - \left(\frac{1}{2}\right)^{-2} \cdot \left(\frac{1}{5} + 1\right)\right] = \frac{8}{5} - \frac{1}{5} : \left[2 - 4 \cdot \frac{6}{5}\right] =$$

$$\frac{8}{5} - \frac{1}{5} : \left(2 - \frac{24}{5}\right) = \frac{8}{5} - \frac{1}{5} : \frac{10-24}{5} =$$

$$\frac{8}{5} - \frac{1}{5} : \frac{-14}{5} = \frac{8}{5} + \frac{8}{5 \cdot 14} = \frac{8}{5} + \frac{1}{14} =$$

$$\frac{112+5}{70} = \frac{117}{70}$$

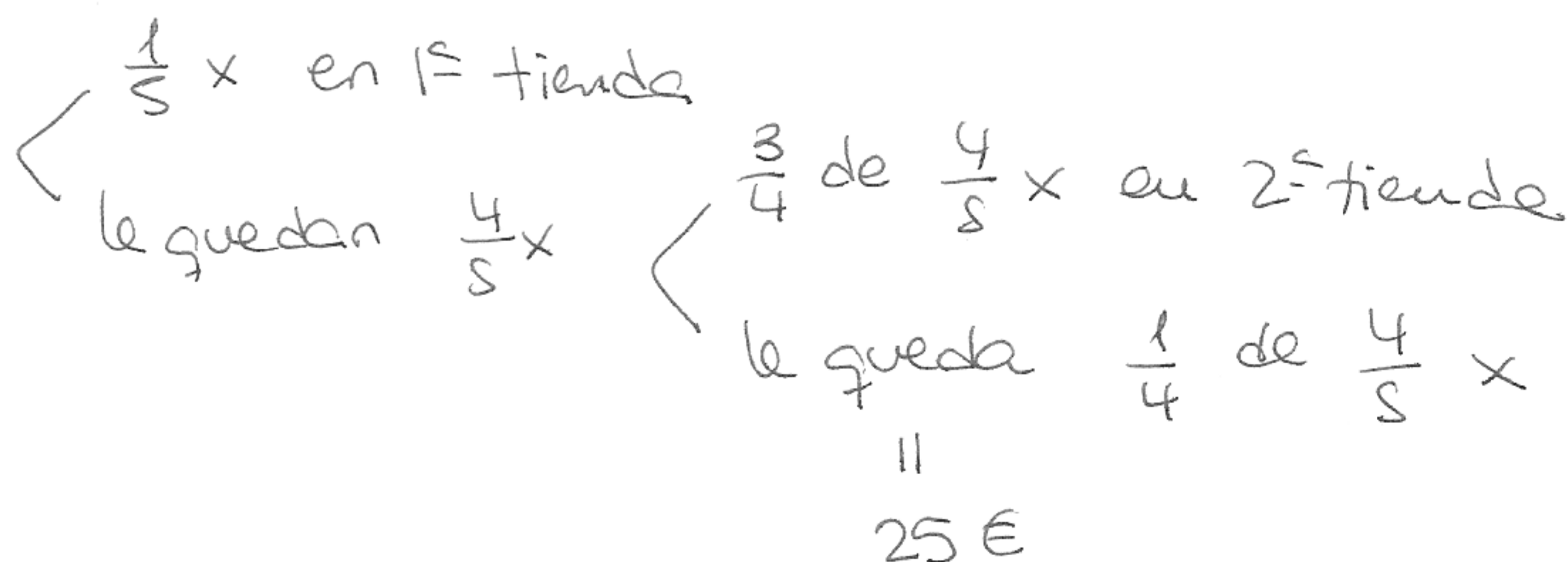
$$\begin{aligned}
 d) \quad & \frac{9}{4} - 1 + \left(\frac{1}{3} - \frac{1}{6}\right)^2 + \left[\left(1 + \frac{5}{2}\right) : \left(1 - \frac{1}{3}\right)\right]^{-1} = \\
 & \frac{9}{4} - 1 + \left(\frac{2-1}{6}\right)^2 + \left[\frac{7}{2} : \frac{2}{3}\right]^{-1} = \\
 & \frac{9}{4} - 1 + \frac{1}{36} + \left(\frac{21}{4}\right)^{-1} = \frac{9}{4} - 1 + \frac{1}{36} + \frac{4}{21} = \\
 & \frac{567 - 252 + 7 + 48}{252} = \frac{370}{252} = \frac{185}{126}
 \end{aligned}$$

③ $\frac{7}{15}$ de los beneficios = $\frac{7}{15}$ de 12000 = $\frac{7}{15} \cdot 12000 = 5600$
 $\frac{5}{12}$ = $\frac{5}{12}$ de 12000 = $\frac{5}{12} \cdot 12000 = 5000$

resto = 12000 - (5600 + 5000) = 1400

solución : tendrán que destinar 5600€ para alimentos, 5000€ para bebidas y 1400€ para gastos.

④ presupuesto = x



luego $\frac{1}{4} \cdot \frac{4}{5} \cdot x = 25 \Rightarrow x = 5 \cdot 25$

$x = 125 \text{ €}$

solución : 125 €

⑤ total alumnado = 36

$$\frac{1}{4} \cdot 36 = 9 \text{ han suspendido}$$

los restantes son $36 - 9 = 27$ alumnos/as.

$$\text{los } \frac{2}{9} \text{ de } 27 = \frac{2 \cdot 27}{9} = 2 \cdot 3 = 6 \text{ aprueban.}$$

$$\begin{array}{l} \text{quienes} \\ \text{aprueban} \end{array} + \begin{array}{l} \text{quienes} \\ \text{suspenden} \end{array} + \begin{array}{l} \text{quienes no} \\ \text{se presentan} \end{array} = \text{total} \\ \text{alumnado}$$

$$6 + 9 + x = 36$$

$$x = 21$$

Solución : 21 alumnos/as no se han presentado.