

TP 5 grupal

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Nota: Subo lo que tengo hasta hora se me complico realizar la actividad esta semana por cuestiones laborales

①	
<u>Datos</u>	<u>Incognita</u>
- Alimento 1	- Contidad de especie 1
Alimento 2	- contidad de especie 2
<u>Entrada</u>	
- Contidad de Alimento 1	
- Contidad de Alimento 2	
	$A = A 1$
	$B = A 2$
② $(1.a.x) + 5.b.y = A$	
$(2.d.x) + 3.c.y = B$	
<u>Eliminacion (y)</u>	
$1.a.x + 5.b.y = A$	
$(-\frac{a}{5})(2.d.x + 3.c.y = B)$	
$(-\frac{a}{5}).2.d.x + (-\frac{a}{5})3.c.y = (-\frac{a}{5}).B$	
$\cancel{1.a.x} + 5.b.y = A$	
$(-\frac{a}{5}).2.d.x + (-\frac{a}{5})3.c.y = (-\frac{a}{5}).B$	
$5.b.y - \frac{a}{5}.3.c.y = A - (-\frac{a}{5}).B$	
$y = \frac{A - (\frac{a}{5}).B}{b - \frac{a.c}{5}}$	
<u>Eliminacion (x)</u>	
$5.b.y + 1.a.x = A$	
$(-\frac{b}{3})(3.c.y + 2.d.x = B(-\frac{b}{c}))$	
$5.b.y + a.x = A$	
$(\frac{b}{3})(3.c.y + 2.d.x = B(-\frac{b}{c}))$	

$$a \cdot x - \frac{b \cdot d}{c} \cdot x = A - \frac{b}{c} B$$

$$\left( a - \frac{b \cdot d}{c} \right) \cdot x = A - \frac{b}{c} B$$

$$\boxed{x = \frac{A - \frac{b}{c} B}{a - \frac{b \cdot d}{c}}}$$

$$\begin{aligned} (3) \quad y &= 20 \cdot \frac{1}{2} \cdot \frac{20}{1} = \frac{20}{1} = 20 \\ &\quad \left( 1 - \frac{5 \cdot 2}{3} \right) \\ &\quad \left[ \frac{20}{1} \cdot \frac{20}{2} \right] \\ &\quad \left[ \frac{3 - \frac{10}{2}}{20 - 40} \right] \\ &\quad \left[ \frac{10 - 3}{2} \right] \\ &\quad \frac{\frac{20}{2}}{\frac{7}{2}} = \frac{20}{7} \cdot \frac{1}{2} = \boxed{\frac{20}{7} = 2,85} \end{aligned}$$

$$\begin{aligned} x &= 20 \cdot \frac{5}{3} \cdot \frac{20}{3} \\ &\quad \left( 1 - \frac{5 \cdot 2}{3} \right) \qquad \text{AUX} \\ &\quad \left[ \frac{45}{3} \cdot \frac{20}{3} \right] \\ &\quad \left[ \frac{100}{1 - \frac{10}{3}} \right] \\ &\quad \frac{\frac{100}{1}}{\frac{7}{3}} = \frac{100}{1} \cdot \frac{3}{7} = \boxed{\frac{100}{7} = 14,28} \end{aligned}$$

$$\begin{aligned} &\quad \frac{20}{1} \cdot \frac{5}{3} \cdot \frac{60 - 15}{3} = \frac{45}{3} \\ &\quad \frac{45}{3} \cdot \frac{20}{7} = \frac{900}{21} \\ &\quad \frac{100}{1} \end{aligned}$$

$$A + B = 20$$

$$a \cdot 14,28 + b \cdot 2,85 = 20$$

④

$$ax + by = A$$

$$dx + cy = B$$

resolver

los 2 incognitos

[despejan (y)]

reemplazar el  
valor de (y) en  
la ecuación.

[despejan (x)]

reemplazar el  
valor de (x) en  
la ecuación.

$$d) \frac{8x-1}{8} = \frac{2x+3}{3}$$

$$\frac{-2x + 8x - 1}{8} = \frac{2x}{3} + \frac{3}{3} + \frac{1}{3} - \frac{8x}{3}$$

$$\frac{-2x}{8} + \frac{8x}{8} = \frac{2x}{3} + \frac{1}{3}$$

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

$$2x \left( \frac{-5+12}{15} \right) = \frac{5+1}{5}$$

$$2x \cdot \frac{7}{15} = \frac{6}{5}$$

$$2x \cdot \frac{14}{15} + 1 = \frac{6}{5} \cdot 3$$

$$x = \frac{18}{14} = \frac{9}{7} = 1\frac{2}{7}$$

Verif.

$$\frac{8 \cdot \frac{9}{7} - 1}{8} = \frac{2 \cdot 1}{3} + 3$$

$$\frac{5}{7} = \frac{7}{3} + 3$$

$$\frac{72-7}{7} = \frac{18+21}{7}$$

$$\frac{65}{7} = \frac{39}{7} + \frac{1}{3}$$

$$\frac{13}{7} = \frac{13}{7}$$

#### IV. K.1

$$\textcircled{a}) \begin{cases} 3x + 5y = 3 & (1) \\ 2x + 3y = 1 & (2) \end{cases}$$

$$\frac{2}{3}(3x + \frac{2}{3} \cdot 5y) = 3 \cdot \frac{2}{3}$$

$$2x + \frac{10}{3}y = 2$$

$$2x + 3y = 1$$

$$\frac{10}{3}y - 3y = 1$$

$$y - \left( \frac{10}{3} - 3 \right) = 1$$

$$y - \left( \frac{10-9}{3} \right) = 1$$

$$2 \cdot y - \frac{1}{3} = 1 - 1$$

$$y = 3$$

Neufang:

$$\textcircled{1} \quad 3x + 5y = 3$$

$$3x + 5 \cdot 3 = 3$$

$$3x = 3 - 15$$

$$3x = -12$$

$$\boxed{x = -4}$$

Verif.

$$3(-4) + 5(+3) = 3$$

$$-12 - 15 = 3$$

$$+3 = 3$$

$$2(-9) + 3(3) = 1$$

$$-18 + 9 = 1$$

$$1 = 1$$

IV.K.1.b.

$$b) -\frac{2}{\sqrt{x}} - \frac{1}{\sqrt{y}} = \frac{2}{3}$$

$$\frac{1}{\sqrt{x}} + \frac{2}{\sqrt{y}} = \frac{7}{6}$$

$$2A - b = \frac{2}{3}$$

$$A + 2b = \frac{7}{6}$$

$$-2A - 2b = -2 - 2A$$

$$5A + b = \left(\frac{7}{3} - 2A\right) - (-1)$$

$$b = 2A - \frac{2}{3}$$

$$A + 2b = \frac{7}{6}$$

$$A + 2 \cdot \left(2A - \frac{2}{3}\right) = \frac{7}{6}$$

$$+\frac{14}{3}A + 4A - \frac{4}{3} = \frac{7}{6} + \frac{4}{3}$$

$$8A = \frac{2}{3} \Rightarrow A = \frac{1}{2}$$

$$b = 2 \cdot \frac{1}{2} - \frac{2}{3}$$

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

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

AUX

$$\boxed{A = \sqrt{x}}$$

$$\boxed{b = \sqrt{y}}$$

$$\frac{7}{6} + \frac{4}{3}$$

$$\frac{7+8}{6} = \frac{15}{6} \quad \text{X.S.}$$

$$A = \frac{1}{\sqrt{x}} = (\sqrt{x})^2 = \left(\frac{1}{2}\right)^2 = \left(\frac{1}{\frac{1}{2}}\right)^2 = \boxed{4}$$

$$b = \frac{1}{\sqrt{y}} = (\sqrt{y})^2 = \left(\frac{1}{\sqrt{3}}\right)^2 = \left(\frac{1}{\frac{1}{\sqrt{3}}}\right)^2 = \boxed{9}$$

Verificación

$$\frac{2}{\sqrt{x}} - \frac{1}{\sqrt{y}} = \frac{2}{3}$$

$$\frac{2}{\sqrt{4}} - \frac{1}{\sqrt{9}} = \frac{2}{3}$$

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

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

$$\frac{1}{\sqrt{x}} + \frac{2}{\sqrt{y}} = \frac{7}{6}$$

$$\frac{1}{\sqrt{4}} + \frac{2}{\sqrt{9}} = \frac{7}{6}$$

$$\frac{1}{2} + \frac{2}{3} = \frac{7}{6}$$

$$\frac{3+4}{6}$$

$$\frac{7}{6} = \frac{7}{6}$$