



COLEGIO ALMA'S
bilingual school

APELLIDOS Y NOMBRE: *Corrección 2do Control*

CURSO: *1º Bachillerato N° 1º Evaluación*

FECHA: *17-Nov-17* ASIGNATURA: *U.S.S. I*

1) a) $2^{-x} = 2^{2(x^2-x)} \rightarrow 2x^2-2x = -x \rightarrow 2x^2-x=0 \rightarrow x(x-1)=0$
 $\boxed{x=0}$
 $\boxed{x=1/2}$

b) $a=3^x$
 $a^2+5a-24=0 \rightarrow a = \frac{-5 \pm \sqrt{25+96}}{2} = \frac{-5 \pm 11}{2}$
 $a=3 \rightarrow \boxed{x=1}$
 $a=-8 \neq$

c) $\log \frac{(2x-2)^2}{x-1} = 1 \rightarrow 4(x-1) = 10 \rightarrow 4x-4=10 \rightarrow \boxed{x=7/2}$

2) a) $x=6y-6$
 $2(6y-6)^2 + y^2 = 76$
 $2(36y^2 - 72y + 36) + y^2 = 76$
 $72y^2 - 144y + 72 + y^2 - 76 = 0$
 $73y^2 - 144y - 4 = 0$
 $y = \frac{144 \pm \sqrt{144^2 + 4 \cdot 73 \cdot 4}}{146}$
 $y = \frac{144 \pm 148}{146}$
 $y=2 \rightarrow \boxed{x=6}$
 $y = -2/73 \rightarrow \boxed{x = \frac{-450}{73}}$

b) $x+y=0 \rightarrow x=-y$
 $xy=-1 \rightarrow -y^2=-1 \rightarrow y=\pm 1$
 $y=1 \rightarrow \boxed{x=-1}$
 $y=-1 \rightarrow \boxed{x=1}$

c) $\left(\begin{array}{ccc|c} 1 & 2 & -1 & -5 \\ 5 & -1 & 2 & 11 \\ 6 & 1 & 1 & 5 \end{array} \right) \xrightarrow{R_2-5R_1, R_3-6R_1} \left(\begin{array}{ccc|c} 1 & 2 & -1 & -5 \\ 0 & -11 & 7 & 36 \\ 0 & -11 & 7 & 35 \end{array} \right) \xrightarrow{R_3-R_2} \left(\begin{array}{ccc|c} 1 & 2 & -1 & -5 \\ 0 & -11 & 7 & 36 \\ 0 & 0 & 0 & -1 \end{array} \right) \#$
 Sistema Incompatible

3) a) $6x^2 - 3x + x^3 = 5x - 1$
 $x^3 - 6x^2 - 8x + 1 = 0 \rightarrow x = \frac{8 \pm \sqrt{64+28}}{14} = \frac{8 \pm 6}{14}$
 $x=1$
 $x=1/7$

 $\boxed{x \in (-\infty, \frac{1}{7}] \cup [1, \infty)}$



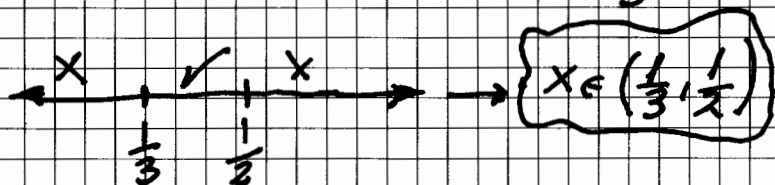
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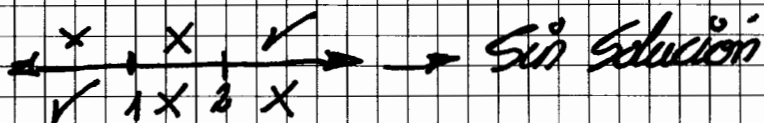
CURSO: N°

FECHA: ASIGNATURA:

$$b) \frac{3x-1}{5-10x} > 0 \quad \text{mcm} = 5-10x = 0 \rightarrow x = \frac{1}{2}$$
$$3x-1=0 \rightarrow x = \frac{1}{3}$$



$$4) \begin{cases} 3x-4 > x \\ x \geq 2x-1 \end{cases} \quad \begin{cases} 3x-4=x \rightarrow 2x=4 \rightarrow x=2 \\ x=2x-1 \rightarrow -x=-1 \rightarrow x=1 \end{cases}$$



$$d) \begin{cases} -3 < 2x+5 \\ 3 > 2x+5 \end{cases} \quad \begin{cases} 2x+5=-3 \rightarrow 2x=-8 \rightarrow x=-4 \\ 2x+5=3 \rightarrow 2x=-2 \rightarrow x=-1 \end{cases}$$

