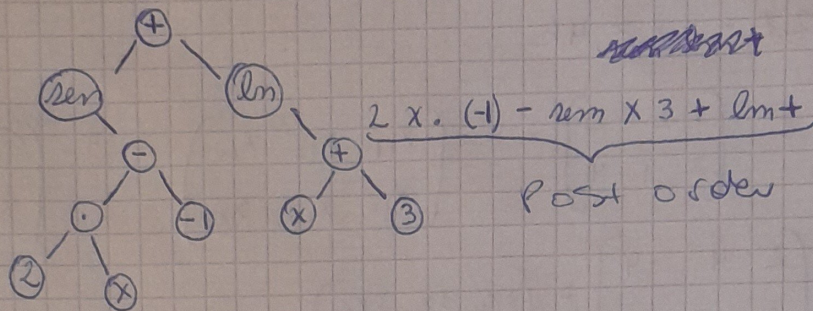


# Segundo Parcial

1)



2)  $A = \{2, 3, 6, 12, 18, 24, 54\}$   $R: A \rightarrow A / "x \text{ es m\u00faltiplo de } y"$

$A \times A = \{(2, 2), (2, 3), (2, 6), (2, 12), (2, 18), (2, 24), (2, 54), (3, 2), (3, 3), (3, 6), (3, 12), (3, 18), (3, 24), (3, 54), (6, 2), (6, 3), (6, 6), (6, 12), (6, 18), (6, 24), (6, 54), (12, 2), (12, 3), (12, 6), (12, 12), (12, 18), (12, 24), (12, 54), (18, 2), (18, 3), (18, 6), (18, 12), (18, 18), (18, 24), (18, 54), (24, 2), (24, 3), (24, 6), (24, 12), (24, 18), (24, 24), (24, 54), (54, 2), (54, 3), (54, 6), (54, 12), (54, 18), (54, 24), (54, 54)\}$

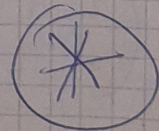
$R = \{(2, 2), (3, 3), (6, 2), (6, 3), (6, 6), (12, 2), (12, 3), (12, 6), (12, 12), (18, 2), (18, 3), (18, 6), (18, 18), (24, 2), (24, 3), (24, 6), (24, 12), (24, 18), (24, 24), (54, 2), (54, 3), (54, 6), (54, 12), (54, 18), (54, 24), (54, 54)\}$

Es Reflexiva

Es Antisimetrica

Es NO TRANSITIVA

	2	3	6	12	18	24	54
2	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
6	1	1	1	0	0	0	0
12	1	1	1	1	0	0	0
18	1	1	1	0	1	0	0
24	1	1	1	1	0	1	0
54	1	1	1	0	1	0	1





$$3) \quad A = \begin{pmatrix} 1 & 2 & -2 \\ 3 & -1 & 4 \end{pmatrix} \quad B = \begin{pmatrix} -3 & -2 & -1 \\ 2 & -4 & 1 \end{pmatrix}$$

$$2A - 3X = 4B$$

$$2 \cdot \begin{pmatrix} 1 & 2 & -2 \\ 3 & -1 & 4 \end{pmatrix} - 3 \cdot \begin{pmatrix} x_{11} & x_{12} & x_{13} \\ x_{21} & x_{22} & x_{23} \end{pmatrix} = 4 \cdot \begin{pmatrix} -3 & -2 & -1 \\ 2 & -4 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 4 & -4 \\ 6 & -2 & 8 \end{pmatrix} - \begin{pmatrix} 3x_{11} & 3x_{12} & 3x_{13} \\ 3x_{21} & 3x_{22} & 3x_{23} \end{pmatrix} = \begin{pmatrix} -12 & -8 & -4 \\ 8 & -16 & 4 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 4 & -4 \\ 6 & -2 & 8 \end{pmatrix} + \begin{pmatrix} -3x_{11} & -3x_{12} & -3x_{13} \\ -3x_{21} & -3x_{22} & -3x_{23} \end{pmatrix} = \begin{pmatrix} -12 & -8 & -4 \\ 8 & -16 & 4 \end{pmatrix}$$

$$2 - 3x_{11} = -12$$

$$2 + 12 = 3x_{11}$$

$$14 = 3x_{11}$$

$$\frac{14}{3} = x_{11}$$

$$4 - 3x_{12} = -8$$

$$4 + 8 = 3x_{12}$$

$$12 = 3x_{12}$$

$$4 = x_{12}$$

$$-4 - 3x_{13} = -4$$

$$0 = 3x_{13}$$

$$0 = x_{13}$$

$$6 - 3x_{21} = 8$$

$$-2 = 3x_{21}$$

$$\frac{-2}{3} = x_{21}$$

$$-2 - 3x_{22} = -16$$

$$14 = 3x_{22}$$

$$\frac{14}{3} = x_{22}$$

$$8 - 3x_{23} = 4$$

$$4 = 3x_{23}$$

$$\frac{4}{3} = x_{23}$$

$$\begin{pmatrix} 2 & 4 & -4 \\ 6 & -2 & 8 \end{pmatrix} + \begin{pmatrix} -3 \cdot \frac{14}{3} & -3 \cdot 4 & -3 \cdot 0 \\ -3 \cdot \left(\frac{-2}{3}\right) & -3 \cdot \frac{14}{3} & -3 \cdot \frac{4}{3} \end{pmatrix}$$

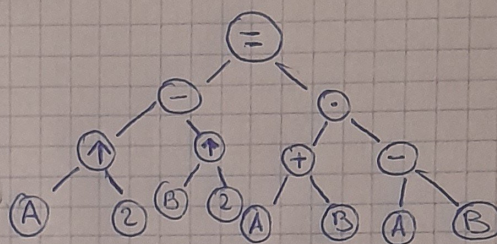
$$\begin{pmatrix} -12 & -8 & -4 \\ 8 & -16 & 4 \end{pmatrix} = \begin{pmatrix} -12 & -8 & -4 \\ 8 & -16 & 4 \end{pmatrix}$$



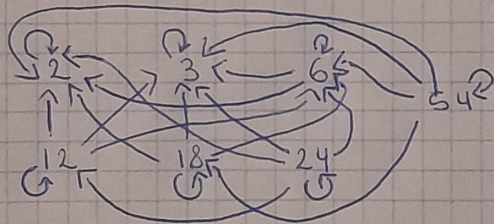
$$\begin{array}{r}
 \text{4) } \begin{array}{ccccccc}
 & & 23 & & & & \\
 & \overbrace{\phantom{10111101}}^{23} & & & & & \\
 10111 & 101 & & & & & \\
 \underline{10111} & 100 & \rightarrow & 4 & & & \\
 0001 & & & & & & \\
 & 2 & \rightarrow & 3 & & & 
 \end{array}
 \end{array}$$

$$5 \cdot 4 + 3 = 23$$

$$5) A \uparrow B \uparrow - AB + AB - =$$



2)  $\otimes$  DIGRAFO



Es Reflexiva porque estan todos los pares ordenados  
 $(2;2), (4;4), (6;6), (12;12), (18;18), (24;24), (54;54)$

Es Antisimetrica porque ademais de ser Reflexiva No tiene  
ningun par simetrico

Es No Transitiva porque hay al menos un par  
transitivo pero no todos