

#B=3

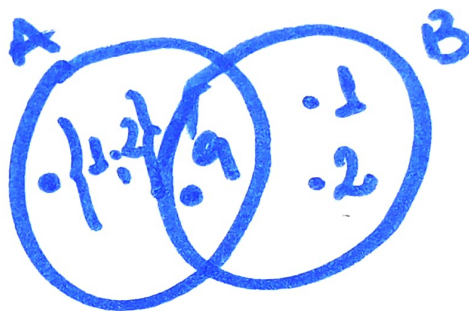
1) Sea el conjunto $B = \{p, \{n\}, \{p, n\}\}$. Señala cuál de las siguientes afirmaciones es verdadera:

- d) a) $\{p\} \in B$ (F) b) $\{p, n\} \subseteq B$ (F) c) $n \in B$ (F) d) $\{p, n\} \in B$ (V)
- $\{n\} \in B$ (V)
- $\{p, n\} \in B$ (V)
- $\{p, n\} \subseteq B$ (F)
- $\{p, n\} \in B$ (V)

2) Sean $A = \{\{1, 2\}, 9\}$ y $B = \{1, 2, 9\}$. Indicar la opción correcta para

$A \cap B$

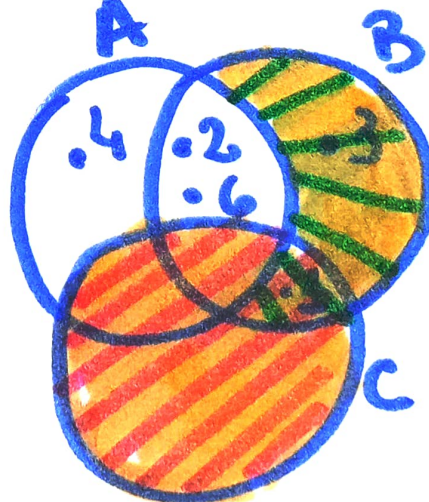
- c) a) $A \cap B = \{1, 2, 9\}$ (F) b) $A \cap B = \{\{1, 2\}, 9\}$ (F) c) $A \cap B = \{9\}$ (V) d) $A \cap B = \{\{1, 2\}\}$ (F)



3) Sean $A = \{2, 4, 6\}$, $B = \{6, 3, 1, 2\}$ y $C = \{1\}$. Indicar la opción correcta para:

$(B - A) \cup C$

- a) $(B - A) \cup C = \{1, 3, 6\}$ b) $(B - A) \cup C = \{1, 3\}$ (V) c) $(B - A) \cup C = \{1, 2, 3, 6\}$ d) $(B - A) \cup C = \{2, 3, 4, 6\}$



4) Sean los conjuntos $A = \{x \in \mathbb{N} : 20 \leq x^2 \leq 200\}$ y $B = \{x \in \mathbb{N} : 2 < 4x - 1 < 35\}$, indicar cuál de las siguientes opciones corresponde a $A \cap B$

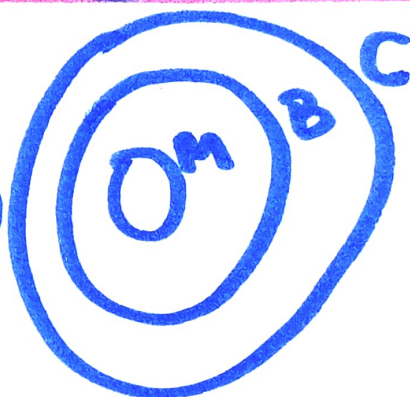
- a) $A \cap B = \{5, 6, 7, 8\}$ (V)
 b) $A \cap B = \{5, 6, 7\}$
 c) $A \cap B = \{5, 6, 7, 8, 9\}$
 d) $A \cap B = \{6, 7, 8, 9, 10\}$



5) Si $M \subseteq B$ y $B \subseteq C$, entonces:

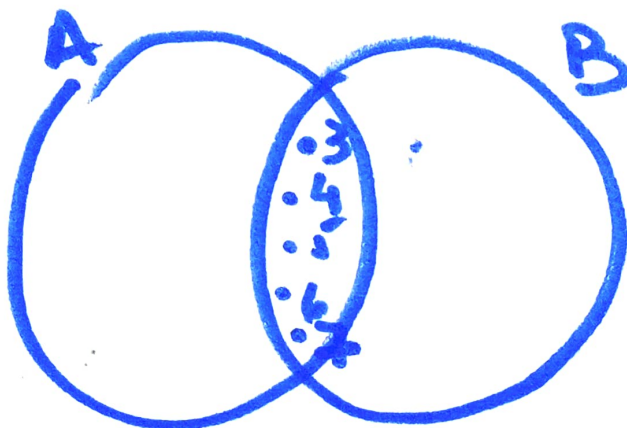
- a) $B \subseteq M$ (F)
 b) Cumple la propiedad transitiva (V)
 c) $M \cap C = \emptyset$ (F)
 d) $M \subseteq C$ (V)

$$M \cap C = M$$



6) Sean los conjuntos $A = \{x \in \mathbb{N} : 5 \leq x^2 < 50\}$, $B = \{x \in \mathbb{N} : 2x + 1 \leq 15\}$. Hallar $A \cap B$.

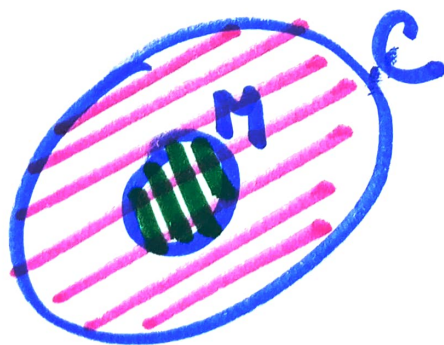
- a) $\{2, 3, 4\}$
 b) $\{3, 4, 5, 6, 7\}$ (V)
 c) $\{3, 4\}$
 d) $\{2, 3, 4, 5\}$



Prop. Transitiva ✓

$$aRb \wedge bRc \Rightarrow aRc$$

$$M \subseteq B \wedge B \subseteq C \Rightarrow M \subseteq C$$

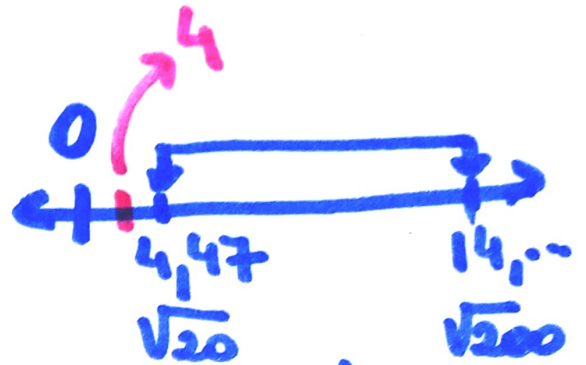


$$4) A = \{x \in \mathbb{N} : 20 \leq x^2 \leq 200\}$$

$$20 \leq x^2 \leq 200$$

$$\sqrt{20} \leq x \leq \sqrt{200}$$

$$4,47 \leq x \leq 14,14$$



$$A = \{5; 6; 7; 8; 9; 10; 11; 12; 13; 14\}$$

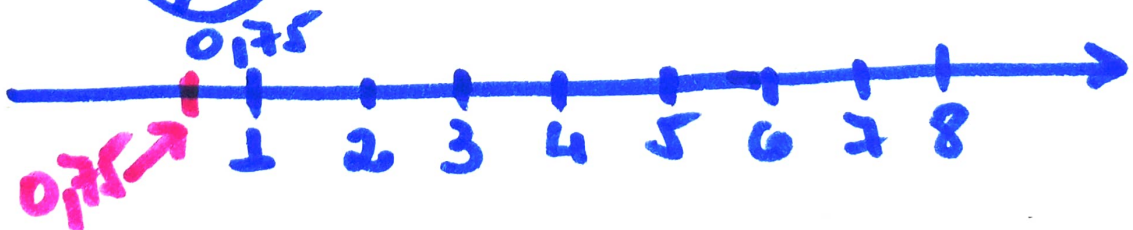
$$B = \{x \in \mathbb{N} / 2 < 4x - 1 < 35\}$$

$$2 < 4x - 1 < 35$$

$$2 + 1 < 4x < 35 + 1$$

$$3/4 < x < 36/4$$

$$\left(\frac{3}{4}\right) < x < 9$$



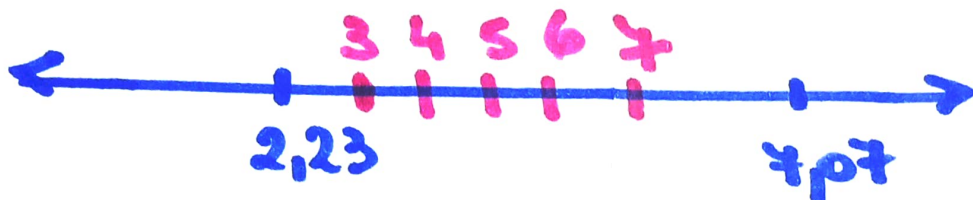
$$B = \{1; 2; 3; 4; 5; 6; 7; 8\}$$

$$6) A = \{x \in \mathbb{N} \wedge 5 \leq x^2 < 50\}$$

$$5 \leq x^2 < 50$$

$$\sqrt{5} \leq x < \sqrt{50}$$

$$2,23 \leq x < 7,07$$



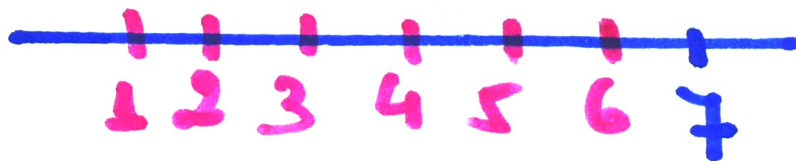
$$A = \{\bar{3}; \bar{4}; \bar{5}; \bar{6}; \bar{7}\}$$

$$B = \{x \in \mathbb{N} \mid 2x + 1 \leq 15\}$$

$$2x \leq 15 - 1$$

$$2x \leq 14$$

$$x \leq 7$$



$$B = \{\bar{1}; \bar{2}; \bar{3}; \bar{4}; \bar{5}; \bar{6}; \bar{7}\}$$

$$\#A = 3$$

7) Dado el conjunto $A = \{1, 2, 3\}$, cuál de las siguientes afirmaciones es verdadera:

$$\#P(A) = 2^{\#A} = 2^3 = 8$$

a) $P(A) = \{\emptyset, \{1\}, \{2\}, \{3\}, \{1, 3\}\}$

b) $P(A) = \{\emptyset, \{1\}, \{2\}, \{3\}\}$

c) $P(A) = \{\emptyset, \{1\}, \{2\}, \{3\}, \{1, 3\}, \{1, 2\}, \{2, 3\}, \{1, 2, 3\}\}$ ✓

d) $P(A) = \{\emptyset, \{1\}, \{2\}, \{3\}, \{1, 3\}, \{1, 2\}, \{2, 3\}\}$



8) En cuál de los siguientes casos A está incluido en B:

a) $B = \{x \in R: |x| \leq 2\}$ $A = \{x \in R: x^2 < 8\}$ (F)

b) $A = \{x \in Z: -3 < 2x + 3 < 20\}$ $B = \{x \in Z: -4 < x + 2 < 12\}$

c) $A = \{x \in Z: x + 4 > \sqrt{8}\}$ $B = \{x \in Z: 3x - 2 > \sqrt{7}\}$

d) $A = \{1, 2, \{3, 4\}\}$ $B = \{\{3, 4\}, 2, 3, 5\}$

9) Sea el conjunto universal $U = \{1, 5, \{3, 4\}, \{1, 5\}, 7, 6, 8, 9, \{10, 11\}\}$

$A = \{1, 5, \{3, 4\}, 7\}$

$B = \{\{3, 4\}, 1, 6, 8\}$

$C = \{\{1, 5\}, \{3, 4\}, 7\}$

Hallar $A^C \cap (B - C)$

a) $A^C \cap (B - C) = \{\{1, 5\}, 6, 8\}$

b) $A^C \cap (B - C) = \{6, 8\}$ ✓

c) $A^C \cap (B - C) = \{1, 6, 8\}$

d) $A^C \cap (B - C) = \emptyset$

8) a)

$$B = \{x \in \mathbb{R} : |x| \leq 2\}$$

$$|x| \leq 2$$

$$-2 \leq x \leq 2$$

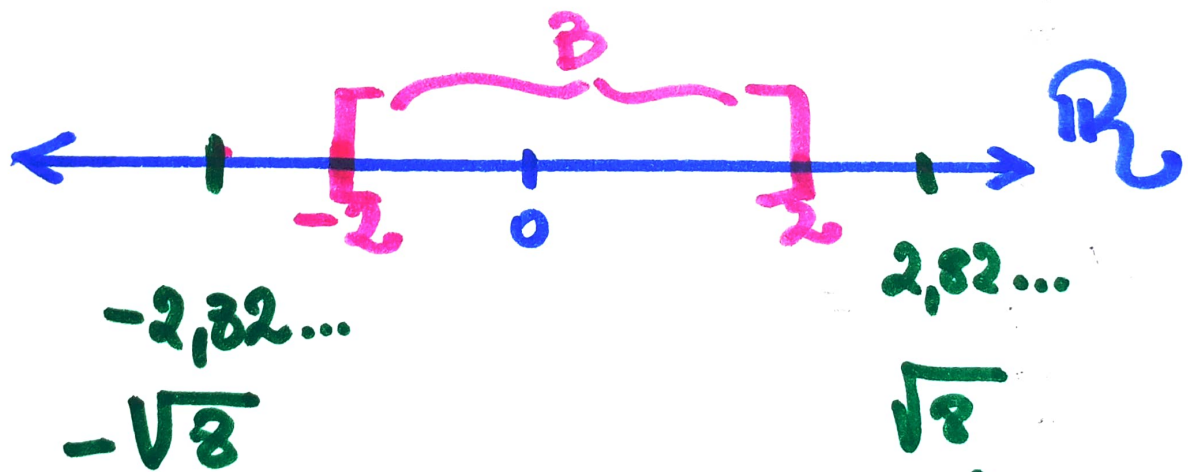
$$A = \{x \in \mathbb{R} / x^2 < 8\}$$

$$x^2 < 8 \Rightarrow |x| < \sqrt{8}$$

$$-\sqrt{8} < x < \sqrt{8}$$

$$-2,82 < x < 2,82$$

$$\begin{array}{|l} |x| < b \\ -b < x < b \\ \hline \text{Intersección} \\ |x| > b \\ -b > x > b \\ \hline \text{Unión} \end{array}$$



(F)

Verdadero
 $B \subseteq A$

3) b)

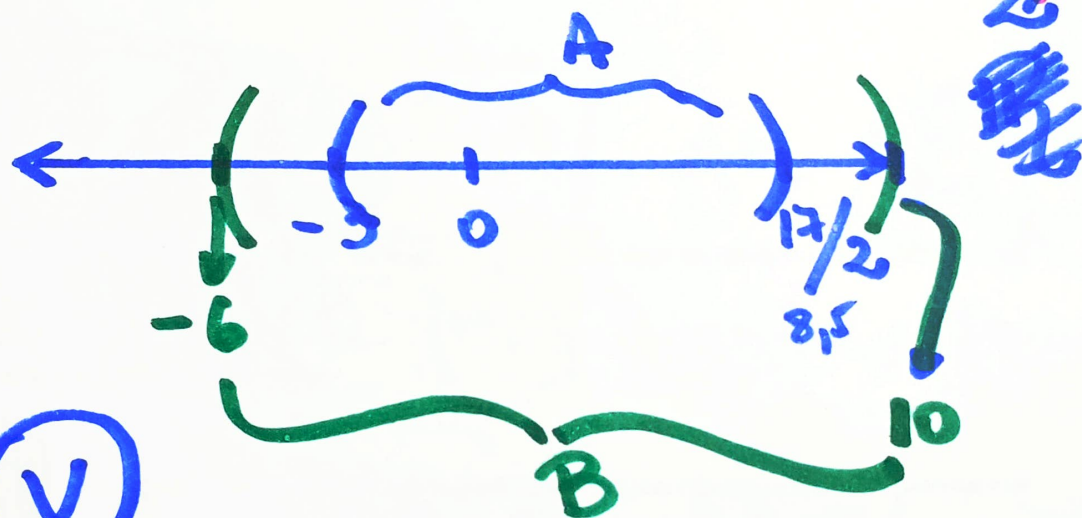
$$A: x \in \mathbb{Z}$$

$$\begin{aligned} -3 &< 2x+3 < 20 \\ -3-3 &< 2x < 20-3 \\ -6 &< 2x < 17 \\ -3 &< x < 17/2 \end{aligned}$$

$$B: x \in \mathbb{Z}$$

$$\begin{aligned} -4 &< x+2 < 12 \\ -4-2 &< x < 12-2 \\ -6 &< x < 10 \end{aligned}$$

$$B = \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$$



(V)

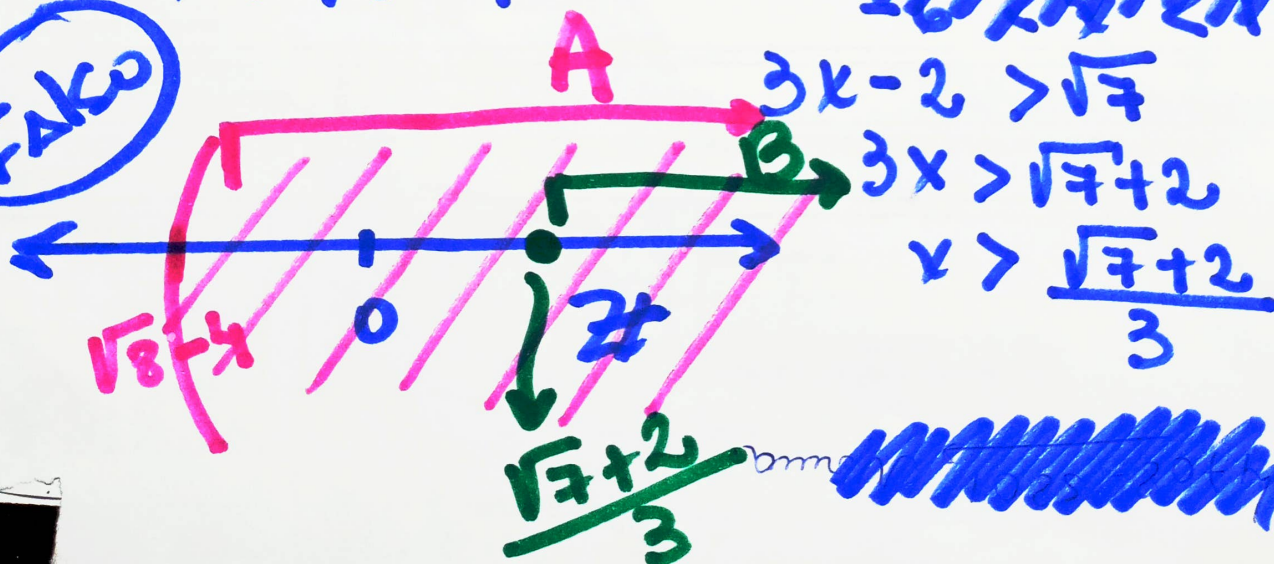
3) c) $A: x \in \mathbb{Z}$

$$\begin{aligned} x+4 &> \sqrt{8} \\ x &> \sqrt{8}-4 \end{aligned}$$

$$B: x \in \mathbb{Z}$$

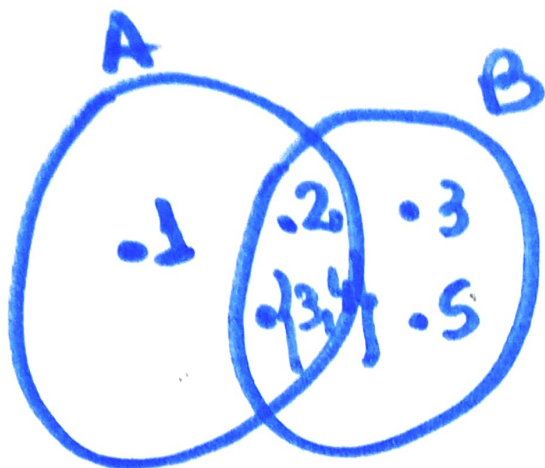
~~$$\begin{aligned} -4 &< x+2 < 12 \\ -4-2 &< x < 12-2 \\ -6 &< x < 10 \end{aligned}$$~~

(Falso)



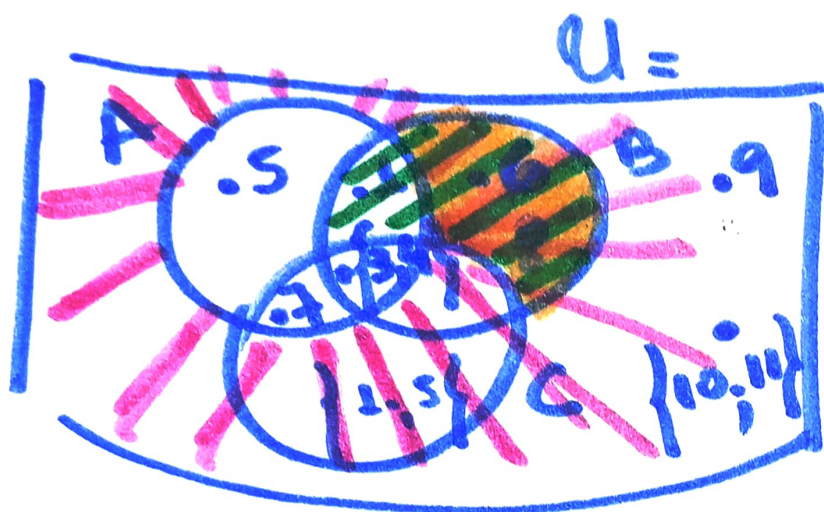
3) d)

~~***~~



FAISO

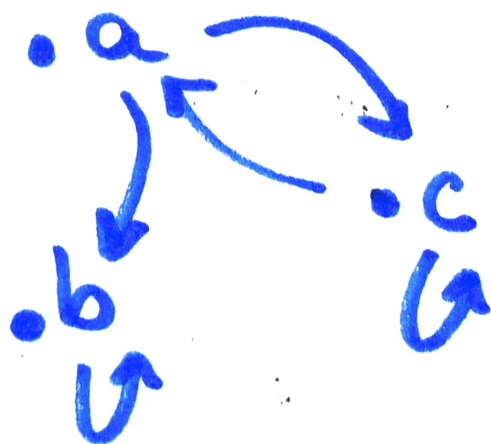
a)



$$\overline{A}^c \cap (\overline{B} - C)$$

$$A^c \cap (B - C) = \{6; 8\}$$

10)

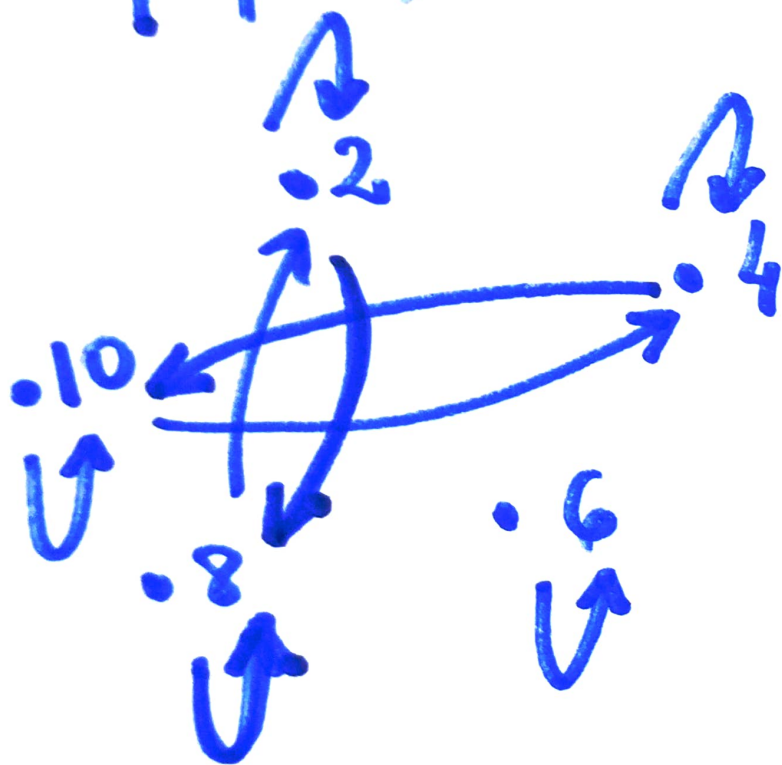


opciune b)
Verdadeiro.

~~t/1~~ 2) a 10)

~~t/2~~ $A = \{2, 4, 6, 8, 10\}$

$R = \{(x, y) \in A \times A : (x - y) \text{ es múltiplo de } 3\}$



• Reflexiva ✓

• Simétrica ✓

• ~~Antisimétrica~~

• Transitiva ✓

Equivalencia