

Classwork 3 - Set Theory

Ορισμός.

Έστω A, B δύο σύνολα (αριθμών)

Τα A, B είναι **ίσα**, γράφω $A=B$
αν $A \subseteq B$ και $B \subseteq A$.

Άσκηση

Να ελέγξετε εάν $A=B$

$$1) A = \{x \in \mathbb{R} : 2x + 1 = 0\}$$

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

$$2) A = \{x \in \mathbb{R} : x^2 + 2x + 1 = 0\}$$

$$B = \{-1\}$$

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

$$B = \mathbb{N}$$

$$4) A = \{x \in \mathbb{R} : x^2 + 3x + 2 = 0\}$$

$$B = \{-1, -2\}$$

$$5) A = \{x \in \mathbb{Q} : x^2 + 3x + 2 = 0\}$$

$$B = \emptyset$$

$$6) A = \{x \in \mathbb{R} : x \in \mathbb{Q}\}$$

$$B = \mathbb{I} \text{ (άρρητοι)}$$

$$7) A = \{x \in \mathbb{Z} : x = 2y, \text{ για κάποιο } y \in \mathbb{Z}\}$$

$$B = \{0, 2, 4, 6, 8, 10, \dots\}$$

$$8) A = \{-1, 2, 3, 4, 5, -10\}$$

$$B = \{x \in \mathbb{Z} : (x+1) \cdot (x-2) \cdot (x+3) \cdot (x-4) \cdot (x-5) \cdot (x+10) = 0\}$$

$$9) A = \{-1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}\}$$

$$B = \{x \in \mathbb{Z} : (x+1) \cdot (x-\frac{1}{2}) \cdot (x-\frac{1}{3}) \cdot (x-\frac{1}{4}) = 0\}$$

$$10) A = \{x \in \mathbb{Z} : -5 \leq x < 2\}$$

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

$$11) A = \{x \in \mathbb{N} : -5 \leq x < 2\}$$

$$B = \{0, 1\}$$

$$12) A = \{x \in \mathbb{Z} : |x| \leq 2\}$$

$$B = \{-2, -1, 0, 1, 2\}$$

$$13) A = \{x \in \mathbb{Q} : |x| > 3\}$$

$$B = \{x \in \mathbb{Z} : |x| > 3\}$$

$$14) A = \mathcal{P}(\{1, 2\})$$

$$B = \{\emptyset, \{1\}, \{2\}, \{1, 2\}\}$$

$$15) A = \{x \in \mathbb{Z} : 1 < |x| \leq 6\}$$

$$B = \{3, 4, 5, -3, -4, -5\}$$