

LISTA MCC

SEÇÃO 0.3

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Seção 0.3

01. Let $A = \{1, 4, 9\}$ and $B = \{1, 3, 6, 10\}$. Find each of the following sets.

a) $A \cup B = \{1, 3, 4, 6, 9, 10\}$

b) $A \cap B = \{1\}$

c) $A \setminus B = A - B = \{4, 9\}$

d) $B \setminus A = B - A = \{3, 6, 10\}$

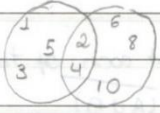
02. Find the following cardinalities:

a) $|A|$ when $A = \{1, 5, 6, \dots, 37\}$. 34

b) $|A|$ when $A = \{x \in \mathbb{Z} : -2 \leq x \leq 100\}$. 103

c) $|A \cap B|$ when $A = \{x \in \mathbb{N} : x \leq 20\}$ and $B = \{x \in \mathbb{N} : x \text{ is prime}\}$. 8

04. Find the set of largest possible size that is a subset of both $\{1, 2, 3, 4, 5\}$ and $\{2, 4, 6, 8, 10\}$.

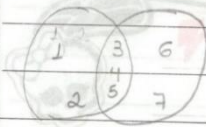


$\{2, 4\}$

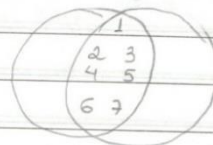
07. Let $A = \{1, 2, 3, 4, 5\}$ and $B = \{2, 3, 4\}$. How many sets C have the property that $C \subseteq A$ and $B \subseteq C$.

08. Let $A = \{1, 2, 3, 4, 5\}$, $B = \{3, 4, 5, 6, 7\}$, and $C = \{2, 3, 5\}$.

a) Find $A \cap B$.



b) Find $A \cup B$.



c) Find $A - B$.

$\{1, 2\}$

d) Find $A \cap (\overline{B \cup C})$.

$\{1\}$

10. Let $A = \{x \in \mathbb{N} : 3 \leq x \leq 13\}$, $B = \{x \in \mathbb{N} : x \text{ is even}\}$, and $C = \{x \in \mathbb{N} : x \text{ is odd}\}$.

a) Find $A \cap B$.

b) Find $A \cup B$.

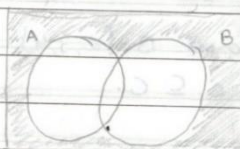
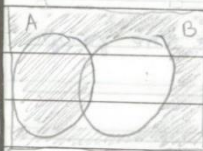
c) Find $B \cap C$.

d) Find $B \cup C$.

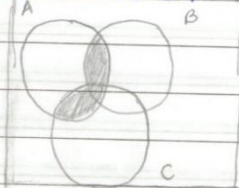
15. Draw a Venn diagram to represent each of the following.

a) $A \cup \overline{B}$

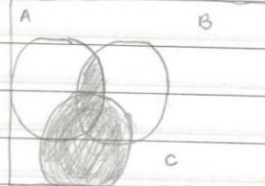
b) $\overline{(A \cup B)}$



c) $A \cap (B \cup C)$



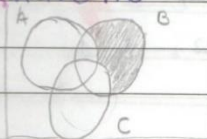
d) $(A \cap B) \cup C$



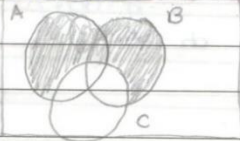
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$$\bar{A} \cap B \cap \bar{C}$$



$$A \cap (A \cup B) \cap \bar{C}$$



19. Let $A = \{1, 2, 3, 4, 5, 6\}$. Find all sets $B \in P(A)$ which have the property $\{2, 3, 5\} \subset B$.