

h.  $(A \cap C) \cap B = \emptyset$ . Verdadeira, pois a interseção de A e C resulta em valores ímpares, e a interseção entre esse conjunto e B é vazia.

i.  $A \cup B = \mathbb{N}$ . Verdadeira, pois a união de A e B forma o próprio conjunto dos naturais.

5.  $A = \{-2, 0, 2, 4\}$

$$X = (A' \cap B) \cap (C \cap D')$$

$$B = \{-2, 2, 4, 5\}$$

$$\{5\} \cap \{\emptyset\}$$

$$C = \{0, 1, 2, 3, 4\}$$

$$\emptyset$$

$$D = \{0, 1, 2, 3, 4, 5, 7, 9, 11\}$$

$$X = \text{vazia}$$

$$A' = X \setminus A$$

$$D' = X \setminus D$$

6-a.  $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$$A \cap B \cap C$$

$$B = \{5, 6, 7, 8, 9, 10, 11, 12, 13\}$$

$$\{6, 7\}$$

$$C = \{3, 6, 7, 11, 12, 13\}$$

$$U = \{x \in \mathbb{N} \mid 1 \leq x \leq 15\}$$

b.  $A' = \{10, 11, 12, 13, 14, 15\}$

$$(A \cap B \cap C)'$$

$$B' = \{1, 2, 3, 4, 14, 15\}$$

$$\{14, 15\}$$

$$C' = \{1, 2, 4, 5, 8, 9, 10, 14, 15\}$$

c.  $(A' \cup B) \cup C' = \{1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$

$$A' \cup B = \{5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$$

d.  $(A \cap B)' \cup (A \cap C)' \cup (B \cap C)' = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$

$$(A \cap B)' = (5, 6, 7, 8, 9)' = \{1, 2, 3, 4, 10, 11, 12, 13, 14, 15\}$$

$$(A \cap C)' = \{3, 6, 7\}$$

$$(B \cap C)' = (6, 7, 11, 12, 13)' = \{1, 2, 3, 4, 5, 8, 9, 10, 14, 15\}$$