

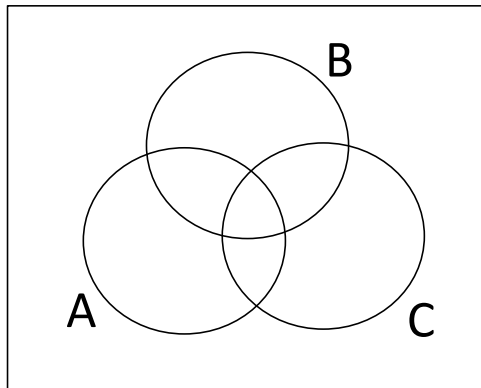
Quiz 4

Instructor: Sandy Irani

1. Fill in the Venn diagram for the following sets:

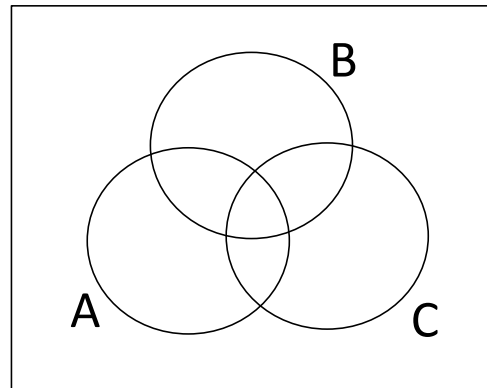
(a)

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



(b)

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



2. Define the sets A, B, C, D as:

$$A = \{a, b, c\}$$

$$B = \{1, 2, 3, 4\}$$

$$C = \{x \in \mathbb{Z} : x \text{ is prime}\}$$

$$D = \{x \in \mathbb{Z} : x \text{ is a multiple of 3}\}$$

Indicate whether each statement is true or false:

(a) $(b, 3) \in A \times B$

(g) $D - B$ is finite.

(b) $A \subseteq A \times A$

(h) $B \cup A \subseteq \mathbb{Z}$

(c) $\emptyset \in P(B)$

(i) $|B \cap D \cap C| = 1$

(d) $D \cap B = \emptyset$

(j) $D \times C \subset \mathbb{Z}^2$

(e) $1 \in B \times B$

(k) $4 \in D \cup C$

(f) $\emptyset \subseteq P(B)$

(l) $B \cap C \subset B \cap D$