

STATISTICS EXAMPLE 1

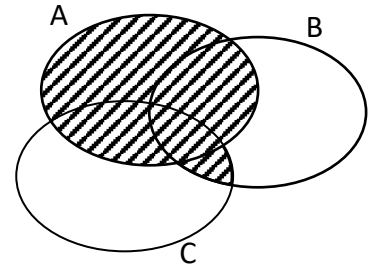
Which of the following represents the shaded portion of the diagram?

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

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

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

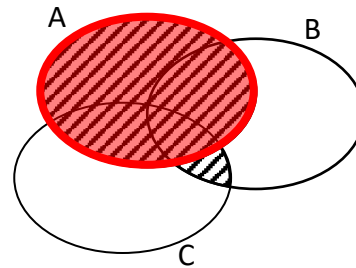
(D) $(A \cup B) \cap C$



SOLUTION

Look at **this** part of the diagram

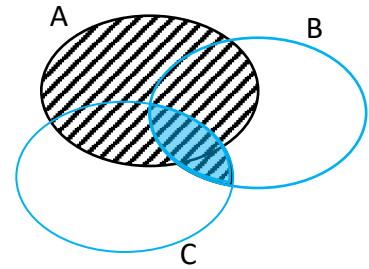
It represents set A.



Now look at **this** part of the diagram

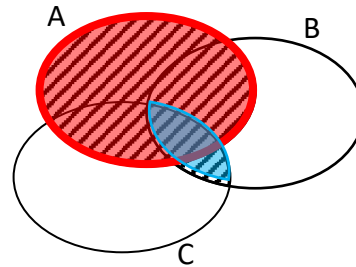
It represents the intersection of set B and set C

i.e., $B \cap C$



So, this whole shaded part of the diagram is the *union* of set A with $B \cap C$

This is written as $A \cup (B \cap C)$



So, the correct answer is B.