

Solution for exercise 1.3.2 in Pitman

Question a) The event which occurs if exactly one of the events A and B occurs

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

Question b) The event which occurs if none of the events A , B , or C occurs.

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

Question c) The events obtained by replacing “none” in the previous question by “exactly one”, “exactly two”, and “three”

Exactly one $(A \cap B^c \cap C^c) \cup (A^c \cap B \cap C^c) \cup (A^c \cap B^c \cap C)$

Exactly two $(A \cap B \cap C^c) \cup (A \cap B^c \cap C) \cup (A^c \cap B \cap C)$

Exactly three $(A \cap B \cap C)$