7. Let A = The set of all natural numbersless than 8, B = The set of all prime numbersless than 8, C = The set of even primenumber. Verify that(i) $(A \cap B) \times C = (A \times C) \cap (B \times C)$ (ii) $A \times (B - C) = (A \times B) - (A \times C)$

Solution :

Given A = {----------} B = {----------} C = {--}

(i) To verify : $(A \cap B) \times C = (A \times C) \cap (B \times C)$

$A \cap B$ = {---------}

$\therefore (A \cap B) \times C$ = {----------}... (1)

$A \times C$ = {----------}

$B \times C$ = {----------}

$(A \times C) \cap (B \times C)$ ={----------}... (2)

$\therefore$ From (1) and (2), LHS = RHS.

(ii) To verify : $A \times (B - C) = (A \times B) - (A \times C)$

$B - C$ = {----------}

$\therefore A \times (B - C)$ = {----------}

$A \times B$ = {----------}

$A \times C$ = {----------}

$\therefore (A \times B) - (A \times C)$= {----------}...(2)

$\therefore$ From (1) and (2), LHS = RHS.