Question 34

Let $A = \{a, b, c\}$, $B = \{x, y\}$ and $C = \{0, 1\}$.

(a) $A \times B \times C$
$= (A \times B) \times C$
$= \{(a, x), (a, y), (b, x), (b, y), (c, x), (c, y)\} \times C$
$= \{(a, x, 0), (a, x, 1), (a, y, 0), (a, y, 1), (b, x, 0), (b, x, 1),$
$(b, y, 0), (b, y, 1), (c, x, 0), (c, x, 1), (c, y, 0), (c, y, 1)\}$

(b) $C \times B \times A$
$= (C \times B) \times A$
$= \{(0, x), (0, y), (1, x), (1, y)\} \times A$
$= \{(0, x, a), (0, x, b), (0, x, c), (0, y, a), (0, y, b), (0, y, c),$
$(1, x, a), (1, x, b), (1, x, c), (1, y, a), (1, y, b), (1, y, c)\}$

(c) $C \times A \times B$
$= (C \times A) \times B$
$= \{(0, a), (0, b), (0, c), (1, a), (1, b), (1, c)\} \times B$
$= \{(0, a, x), (0, a, y), (0, b, x), (0, b, y), (0, c, x), (0, c, y)$
$(1, a, x), (1, a, y), (1, b, x), (1, b, y), (1, c, x), (1, c, y)\}$

(d) $B \times B \times B$
$= (B \times B) \times B$
$= \{(x, x), (x, y), (y, x), (y, y)\} \times B$
$= \{(x, x, x), (x, x, y), (x, y, x), (x, y, y), (y, x, x), (y, x, y), (y, y, x), (y, y, y)\}$