

## Study unit 5

### Activity 5-4

Suppose  $A = \{1, 2, 3, 4\}$ ,  $B = \{2, 5\}$ ,  $C = \{3, 4, 7\}$  and the universal set  $U = \{1, 2, 3, 4, 5, 7\}$ . Write out the following Cartesian products by using list notation:

- (a)  $A \times B = \{(1, 2), (1, 5), (2, 2), (2, 5), (3, 2), (3, 5), (4, 2), (4, 5)\}$
- (b)  $B \times A = \{(2, 1), (2, 2), (2, 3), (2, 4), (5, 1), (5, 2), (5, 3), (5, 4)\}$
- (c)  $A \cup B = \{1, 2, 3, 4, 5\}$   
 $(A \cup B) \times C = \{(1, 3), (1, 4), (1, 7), (2, 3), (2, 4), (2, 7), (3, 3), (3, 4), (3, 7), (4, 3), (4, 4), (4, 7), (5, 3), (5, 4), (5, 7)\}$
- (d)  $A + B = \{1, 3, 4, 5\}$   
 $(A + B) \times B = \{(1, 2), (1, 5), (3, 2), (3, 5), (4, 2), (4, 5), (5, 2), (5, 5)\}$