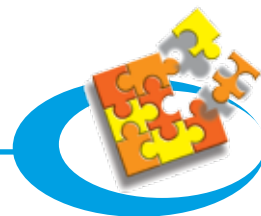




Revision Topic 6

Set Language And Matrices

Integrated Examples



Example 1

Suppose $\varepsilon = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$,

$A = \{x: x \text{ is a factor of } 24\}$,

$B = \{x: x \text{ is an odd integer}\}$.

- (a) List the elements of the set
- A ,
 - $A \cap B$.
- (b) Find $n(A \cup B')$.
- (c) Draw a Venn diagram to represent the sets ε , A and B .
- (d) Find $n[(A \cup B)']$.
- (e) If $t \in B$ and t is a root of $2x^2 - 5x - 3 = 0$, find the value of t .

Solution (a) (i) Since $1 \times 24 = 2 \times 12 = 3 \times 8 = 4 \times 6 = 24$,

$$A = \{x: x \text{ is a factor of } 24\} \\ = \{1, 2, 3, 4, 6, 8\}$$

$$(ii) \quad B = \{x: x \text{ is an odd integer}\} \\ = \{1, 3, 5, 7, 9\} \\ \therefore A \cap B = \{1, 3\}$$

$$(b) \quad B' = \{2, 4, 6, 8\} \\ \therefore A \cup B' = \{1, 2, 3, 4, 6, 8\} \\ n(A \cup B') = 6$$

(c) The required Venn diagram is as shown below.

