SETS

INTERSECTION AND UNION

Ref: G986. 7R1

A1 $A = \{2, 3, 5, 7, 11\}$ $B = \{3, 5, 7, 9\}$ List $A \cup B$	**A2** $A = \{\text{factors of } 100\}$ $B = \{\text{multiples of } 5\}$ List $A \cap B$	**A3** $A = \{\text{c, h, i, n, a}\}$ $B = \{\text{i, t, a, l, y}\}$ List $A \cup B$	**A4** $A = \{\text{s, u, p, e, r}\}$ $B = \{\text{c, o, m, p, u, t, e, r}\}$ List $A \cap B$
B1 $A = \{1, 3, 6, 10, 15\}$ $B = \{3, 6, 9, 12\}$ Find $\text{n}(A \cup B)$	**B2** $S = \{\text{s, q, u, a, r, e}\}$ $V = \{\text{a, e, i, o, u}\}$ Find $\text{n}(S \cap V)$	**B3** $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $A = \{2, 3, 5\}$ Find $\text{n}(A')$	**B4** $M = \{2, 4, 6, 8, 10\}$ $N = \{1, 3, 5, 7, 9\}$ Find $\text{n}(M \cap N)$
C1 $A = \{2, 4, 6, 8, 10\}$ $B = \{1, 3, 5, 7, 9\}$ Explain why $A \cap B = \varnothing$	**C2** $A = \{\text{multiples of } 5\}$ $D = \{\text{prime numbers}\}$ Is it true that $A \cap D = \varnothing$?	**C3** $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ $A = \{\text{even numbers}\}$ $B = \{\text{multiples of } 3\}$ $x \in B$ and $x \notin A$ What are the possible values of x?	**C4** $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ $A = \{1, 3, 5, 7\}$ $B = \{2, 4, 6, 8\}$ $x \in \mathcal{E}$ and $x \notin A \cup B$ What is the value of x?
D1 $\mathcal{E} = \{\text{even numbers}\}$ $A = \{2, 4, 6, 8, 10\}$ B is such that $A \cap B = \{4, 8\}$ and $\text{n}(B) = 3$. List a possible set B.	**D2** $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{2, 3, 4, 5\}$ C is such that $A \cap C = \{4, 5\}$ and $\text{n}(C) = 4$. List a possible set C.	**D3** $\mathcal{E} = \{2, 4, 6, 8, 10, 12, 14\}$ $A = \{2, 6, 8, 12\}$ C is such that $A \cap C = \varnothing$ and $\text{n}(C) = 3$. List set C.	**D4** $A = \{3, 4, 5\}$ $A \cup B = \{1, 2, 3, 4, 5\}$ B has as few members as possible. List set B.

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Ref: G986. **7R1**

A1 $A = \{2, 3, 5, 7, 11\}$ $B = \{3, 5, 7, 9\}$ List $A \cup B$ { 2, 3, 5, 7, 11, 9 }	**A2** $A = \{\text{factors of } 100\}$ $B = \{\text{multiples of } 5\}$ List $A \cap B$ { 5, 10, 20, 50, 100 }	**A3** $A = \{c, h, i, n, a\}$ $B = \{i, t, a, l, y\}$ List $A \cup B$ { c, h, i, n, a, t, l, y }	**A4** $A = \{s, u, p, e, r\}$ $B = \{c, o, m, p, u, t, e, r\}$ List $A \cap B$ { u, p, e, r }
B1 $A \cup B = \{1, 3, 6, 10, 15, 9, 12\}$ $A = \{1, 3, 6, 10, 15\}$ $B = \{3, 6, 9, 12\}$ Find $n(A \cup B)$ $= 7$	**B2** $S \cap V = \{u, a, e\}$ $S = \{s, q, u, a, r, e\}$ $V = \{a, e, i, o, u\}$ Find $n(S \cap V)$ $= 3$	**B3** $A' = \{1, 4, 6, 7, 8\}$ $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $A = \{2, 3, 5\}$ Find $n(A')$ $= 5$	**B4** $M \cap N = \varnothing$ $M = \{2, 4, 6, 8, 10\}$ $N = \{1, 3, 5, 7, 9\}$ Find $n(M \cap N)$ $= 0$
C1 $A = \{2, 4, 6, 8, 10\}$ $B = \{1, 3, 5, 7, 9\}$ Explain why $A \cap B = \varnothing$ There are NOT ANY elements IN BOTH set A and set B	**C2** $A = \{\text{multiples of } 5\}$ $D = \{\text{prime numbers}\}$ Is it true that $A \cap D = \varnothing$? It's FALSE - number '5' is in both sets	**C3** $x = 3$ or 9 $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ $A = \{\text{even numbers}\}$ $B = \{\text{multiples of } 3\}$ $x \in B$ and $x \notin A$ What are the possible values of x?	**C4** $x = 9$ $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ $A = \{1, 3, 5, 7\}$ $B = \{2, 4, 6, 8\}$ $x \in \mathcal{E}$ and $x \notin A \cup B$ What is the value of x?
D1 $B = \{4, 8, \text{any-even-number-bigger-then-10}\}$ $\mathcal{E} = \{\text{even numbers}\}$ $A = \{2, 4, 6, 8, 10\}$ B is such that $A \cap B = \{4, 8\}$ and $n(B) = 3$. List a possible set B.	**D2** $C = \{4, 5, 1, 6\}$ $\{4, 5, 1, 7\}$ or $\{4, 5, 6, 7\}$ $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{2, 3, 4, 5\}$ C is such that $A \cap C = \{4, 5\}$ and $n(C) = 4$. List a possible set C.	**D3** $C = \{4, 10, 14\}$ $\mathcal{E} = \{2, 4, 6, 8, 10, 12, 14\}$ $A = \{2, 6, 8, 12\}$ C is such that $A \cap C = \varnothing$ and $n(C) = 3$. List set C.	**D4** $B = \{1, 2\}$ $A = \{3, 4, 5\}$ $A \cup B = \{1, 2, 3, 4, 5\}$ B has as few members as possible. List set B.