

Al Moattassem International School - Jubail

Revision 5 - Chapter 14 - Sets

Solve the following :

Q1) A is the set of even positive integers less than 10.

- a) List all the elements of A in set notation.
- b) State whether each of the following statements is True or False.
 - i) $8 \in A$
 - ii) $7 \notin A$
 - iii) $10 \in A$
 - iv) $0 \notin A$

Q2) Given that $B = \{ 3, 6, 9, 12, \dots, 30 \}$ find the value of $n(B)$.

Q3) It is given that $P = \{x: x \text{ is a positive integer less than } 1\}$ and $Q = \{0\}$

- i) List all the elements of P in set notation
- ii) Are P and Q equal sets? Why?

Q4) It is given that $\xi = \{x: x \text{ is an integer between } 1 \text{ and } 13 \text{ inclusive}\}$

And $B = \{ x: x \text{ is a prime number} \}$

- i) List all the elements of ξ and of B in set notation.
- ii) Draw a Venn Diagram to represent the sets ξ and B.

- iii) From the Venn Diagram, list all the elements of B' in set notation.
- iv) Describe the set B' in words.

Q5) It is given that $C = \{1,2,3,4,5,6,7\}$ and $D = \{1,3,5,7\}$

- i) Draw a venn diagram to represent the sets C and D.
- ii) Is D a proper subset of C? Explain.

Q6) List all the subsets and Proper subsets of

- i) $S = \{7,8\}$
- ii) $T = \{a,b,c\}$

Q7) It is given that $E = \{x: x \text{ is a positive integer and a factor of } 12\}$
and $F = \{x: x \text{ is a prime number between } 5 \text{ and } 13 \text{ inclusive}\}$

- i) List all the elements in E and in F in set notation.
- ii) Find $E \cap F$. Explain.
- iii) Draw a venn diagram to represent the sets E and F.

Q8) It is given that $E = \{x: x \text{ is a multiple of } 7 \text{ such that } 0 < x < 63\}$

And $F = \{x: x \text{ is a multiple of } 9 \text{ such that } 0 < x < 63\}$

- i) List all the elements in E and F in set notation.

- ii) Draw a venn diagram to represent the sets E and F
- iii) From the Venn Diagram, find $E \cup F$

Q9) It is given that $\xi = \{1,2,3,\dots,9\}$, Draw Venn Diagrams to illustrate the following sets. In each case, find $A \cup B$.

- a) $A = \{1,2,3,4\}$ $B = \{3,5,7,9\}$
- b) $A = \{1,3,5,7,9\}$ $B = \{2,4,6,8\}$
- c) $A = \{4,8\}$ $B = \{2,4,6,8\}$
- d) $A = \{\text{multiples of } 3\}$ $B = \{\text{prime numbers}\}$
- e) $A = \{\text{multiples of } 4\}$ $B = \{\text{multiples of } 2\}$