

BOARD – ICSE	CLASS –7	TOPIC – SETS
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- Which of the following are sets? Justify your answer.
 - The collection of all the days in a week beginning with the letter ‘T’.
 - The collection of all difficult questions in the chapter on sets.
 - The collection of girls in your class.
 - The collection of all rivers in India.
- Write the following sets in the roster form.
 - $A =$ The set of all even numbers less than 12
 - $B =$ The set of all prime numbers greater than 1 but less than 29
 - $C =$ The set of integers lying between -2 and 2
 - $D =$ The set of letters in the word LOYAL
- Write each of the following in set builder form.
 - $A = \{5, 10, 15, 20\}$
 - $B = \{1, 2, 3, 6, 9, 18\}$
 - $C = \{P, R, I, N, C, A, L\}$
 - $D = \{0\}$
- Write the cardinal number for each of the following.
 - $X =$ The set of months in a year
 - $Y =$ The set of letters in the word INTELLIGENT
 - $Z =$ The set of prime numbers from 2 to 11
 - $P = \{x : x \text{ is an even prime number}\}$
- Classify the following as finite and infinite sets.
 - $A = \{x : x \in \mathbb{N} \text{ and } x \text{ is even}\}$
 - $B = \{x : x \in \mathbb{N} \text{ and } x \text{ is composite}\}$
 - $C = \{x : x \in \mathbb{N} \text{ and } 3x - 2 = 0\}$
 - $D = \{x : x \in \mathbb{N} \text{ and } x^2 = 9\}$
- Identify the following as null set or singleton set.
 - $A = \{x \mid x \in \mathbb{N}, 1 < x < 2\}$
 - $P = \{\text{Point of intersection of two lines}\}$
 - $C = \{x : x \text{ is an even prime number greater than } 2\}$
 - $Q = \{x \mid x \text{ is an even prime number}\}$
- From the sets given below, select the equal sets.
 $A = \{3, 5, 9, 13\}$
 $B = \{2, 3, 4, 5\}$
 $C = \{5, 9, 13, 15\}$
 $D = \{4, 2, 5, 3\}$
- Are two sets A and B equal? Give reasons to support your answer.
 - $A = \{x : x \text{ is a letter in the word SEAT}\}$
 $B = \{x : x \text{ is a letter in the word TASTE}\}$
 - $A = \{2, 6, 10, 14\}$
 $B = \{6, 2, 14, 16\}$
 - $A = \{1, 3, 5, 7, 9\}$

- $B = \{x : x \text{ is a positive odd integer } x \leq 9\}$
 (d) $A = \{0\}$
 $B = \{x : x > 15 \text{ and } x < 5\}$
9. Which of the following pairs of sets are equivalent or equal?
 (a) $A = \{x : x \in \mathbb{N}, x \leq 6\}$
 $B = \{x : x \in \mathbb{W}, 1 \leq x \leq 6\}$
 (b) $P = \{\text{The set of letters in the word 'plane'}\}$
 $Q = \{\text{The set of letters in the word 'plain'}\}$
 (c) $X = \{\text{The set of colors in the rainbow}\}$
 $Y = \{\text{The set of days in a week}\}$
10. Which of the following sets are disjoint or overlapping.
 (a) $A = \{\text{The set of boys in the school}\}$
 $B = \{\text{The set of girls in the school}\}$
 (b) $P = \{\text{The set of letters in the English alphabet}\}$
 $Q = \{\text{The set of vowels in the English alphabet}\}$
 (c) $X = \{x : x \text{ is an odd number, } x < 9\}$
 $Y = \{x : x \text{ is an even number, } x < 10\}$
 (d) $M = \{x : x \text{ is a factor of } 24\}$
 $N = \{x : x \text{ is a multiple of } 3, \text{ less than } 30\}$
11. State whether the following are true or false.
 (a) The set of letters in the word MASTER is finite.
 (b) The set of vowels in the word PLANET is an empty set.
 (c) $\{0\}$ represents a null set.
 (d) Equivalent sets are always equal
12. If $A = \{2, 3, 4, 5\}$, $B = \{c, d, e, f\}$ and $C = \{4, 5, 6, 7\}$;
 Find:
 (i) $A \cup B$ (ii) $A \cup C$
13. Find the intersection of each of the following pairs of sets.
 (a) $A = \{1, 4, 9, 16\}$
 $B = \{3, 6, 9, 12\}$
 (b) $C = \{p, q, r, s\}$
 $D = \{a, b\}$
14. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{1, 2, 4, 6, 8, 10\}$
 $B = \{1, 3, 5, 7, 8, 9\}$
 Find:
 (a) A' (b) B' (c) $A' \cup B'$
15. Find the complement of the following sets if universal set is the set of natural numbers.
 (a) $\{x : x \text{ is a prime number}\}$ (b) $\{x : x \text{ is a multiple of } 2\}$ (c) $\{x : x \text{ is a perfect cube}\}$