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## Your Task☺

- **Which of the following are well-defined sets?**

1. All the colors in the rainbow.
2. All the points that lie on a straight line.
3. All the honest members in the family.
4. All the consonants of the English alphabet.
5. All the tall boys of the school.
6. All the hardworking teachers in a school.
7. All the prime numbers less than 100.
8. All the letters in the word GEOMETRY.

**Ans:**

1. **Well-defined**
2. **Well-defined**
3. **Not well-defined**
4. **well-defined**
5. **well-defined**
6. **not well-defined**
7. **well-defined**
8. **well-defined**

## Your Task☺

- **Write the following sets in the set builder form.**

- (a) A = {2, 4, 6, 8}
- (b) B = {3, 9, 27, 81}
- (c) C = {1, 4, 9, 16, 25}
- (d) D = {1, 3, 5, .....}
- (e) E = {a, e, i, o, u}

**Ans:**

1. **A = {x : x is an even natural number less than 10}**
2. **B = {x : x = 3^n where n belongs to natural number}**
3. **C = {x : x is a perfect square natural number up to 25}**
4. **D = {x | x is an odd number}**
5. **E = {x : x is a vowel letter in English alphabet}**

## Your Task☺

- **Write the following sets in the roster form.**

- (a) $A = \{x : x \in W, x \leq 5\}$
- (b) B = {The set all even numbers less than 12)
- (c) C = {x : x is divisible by 12}
- (d) D = {The set of first seven natural numbers}
- (e) E = {The set of whole numbers less than 5}

**Ans:**

1. **A = {1, 2, 3, 4, 5}**
2. **B = {0, 2, 4, 6, 8, 10}**
3. **C = {12, 24, 36, 48, 60, …}**
4. **D = {1, 2, 3, 4, 5, 6, 7}**
5. **E = {0, 1, 2, 3, 4}**

## Your Task☺

- **Classify the following as finite and infinite sets.**

a. A = {x : x ∈ N and x is even}
b. B = {x : x ∈ N and x is composite}
c. C = {x : x ∈ N and $3x - 2 = 0$}
d. D = {x : x ∈ N and $x^2 = 9$ }
e. E = {The set of numbers which are multiple of 3}
f. F = {The set of letters in English alphabets}
g. G = {The set of persons living in a house}
h. H = {x : x ∈ P, P is a number}
i. I = {The set of fractions with numerator 3}

**Ans:**

a. **Infinite**
b. **Infinite**
c. **Finite**
d. **Finite**
e. **Infinite**
f. **Finite**
g. **Finite**
h. **Infinite**
i. **infinite**