

Exercise 10 D

4) State ~~the~~ whether the given set is infinite or finite:

i) $\{3, 5, 7, \dots, \dots\}$

Ans:- Infinite

ii) $\{1, 2, 3, 4\}$

Ans:- finite

iii) $\{\dots, -3, -2, -1, 0, 1, 2\}$

Ans:- infinite

iv) $\{20, 30, 40, 50, 200\}$

Ans:- finite

2) Which of the following sets is empty?

i) Set of counting numbers between 5 and 6.

Yes

ii) Set of odd numbers between 7 and 19.

No

i) $\{ \dots, -5, -4, -3, -2 \}$
Ans: Infinite

ii) $\{ x: x \text{ is an integer between } -60 \text{ and } 60 \}$
Ans: finite

iii) $\{ \text{Number of electrical appliances working in your house} \}$
Ans: finite

iv) $\{ x: x \text{ is a whole number greater than } 20 \}$
Ans: infinite

v) $\{ x: x \text{ is a whole number less than } 20 \}$
Ans: finite

8. For each statement given below write true or false.

i) $\{ \dots, -8, -4, 0, 4, 8 \}$ is a finite set - false

ii) $\{ -30, -28, -24, -20, \dots, 0, 4, 8, 16 \}$ is an infinite set.
false

iii) $\{ x: x \text{ is a natural number less than } 1 \}$ is the empty set.
true

iv) $\{ \text{Whole number between } 15 \text{ and } 16 \} = \{ \text{Natural numbers between } 5 \text{ and } 6 \}$ true

v) $\{ \text{Odd number divisible by } 2 \}$ is the empty set. true

vi) $\{ \text{Even natural numbers divisible by } 3 \}$ is the empty set. true

vii) $\{ x: x \text{ is positive and } x < 0 \}$ is the empty set. true

viii) $\{ \dots, -5, -3, -1, 1, 3, 5 \}$ is a finite set. false

5. State whether or not the following sets are empty.

- i) $\{ \text{Prime numbers divisible by 2} \}$ Not empty
- ii) $\{ \text{Negative Natural } \text{~~and~~ \text{Number}} \}$ Empty
- iii) $\{ \text{Woman with height 5 meters} \}$ Empty
- iv) $\{ \text{Integers less than 5} \}$ Not ~~ED~~ Empty
- v) $\{ \text{Prime number between 17 and 23} \}$ Not Empty
- vi) $\{ \text{Set of even number not divisible by 2} \}$ Empty and
- vii) $\{ \text{Set of multiple of } \text{~~50} \} \}~~$ that are more than 9, less than ~~15~~
- viii) 15. Not empty