

1. Answer the following short questions.

i. What is a set?

Answer:

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ii. How can we represent a set?

Answer:

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iii. What is a Venn diagram?

Answer:

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iv. What are different types of sets?

Answer:

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v. What is the cardinality of a set?

Answer:

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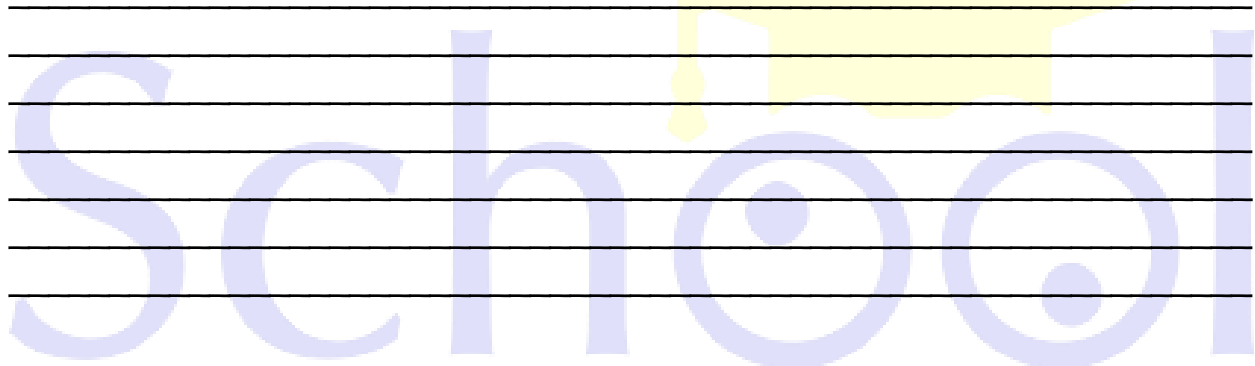
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vi. Define subset?

Answer:



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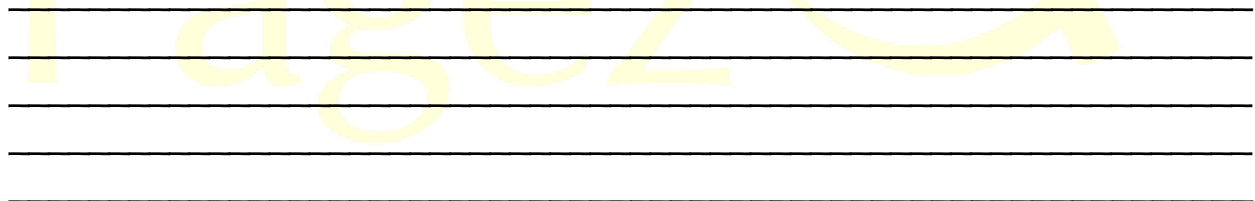
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vii. Define power set with an example?

Answer:



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viii. How can we find the subsets of a set?

Answer:

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ix. Differentiate between proper and improper subset?

Answer:

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x. What is the correspondence of sets means?

Answer:

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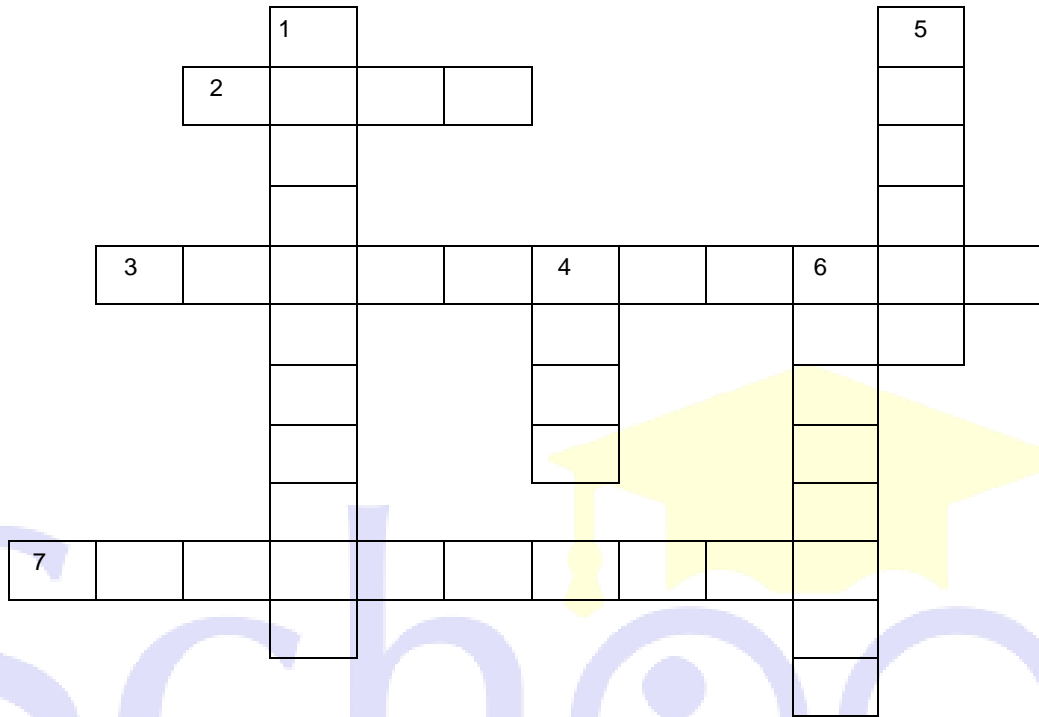
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## 2. Crosswords



**Across:**

- 2. Graphical representation
- 3. Number of elements
- 7. Super set

**Down:**

- 1. Set notation
- 4. No element
- 6. A subset
- 5. Countable

## 3. Fill up the bubbles with correct option.

i. Which of the following sets expresses set P of positive even integers less than 10?			
Ⓐ $A = \{1, 2, 3, 4, 5, 7\}$	Ⓑ $A = \{1, 8, 10\}$	Ⓒ $A = \{2, 4, 6, 8, \}$	Ⓓ $A = \{2, 4, 6, 8, 10\}$
ii. How many subsets does the Power set of an empty have?			
Ⓐ None	Three	Ⓒ Two	Ⓓ One
iii. Which of the following sets A and B are equal?			
Ⓐ $A = \{12, 14, 16, 18\}$ $B = \{18, 16, 14, 12, 10\}$	Ⓑ $A = \{11, 13, 15, 17, 19\}$ $B = \{19, 17, 15, 11\}$	Ⓒ $A = \{0, 12, 14, 16, 18\}$ $B = \{12, 14, 16, 18\}$	Ⓓ $A = \{10, 15, 20\}$ $B = \{20, 15, 10\}$
iv. Let Set Q={fruits which grow on trees} Set A={brinjal, mango, banana}, Set B={mango, pear, orange} Set C={tomato, capsicum, banana, mango} Set D={grape, guava, watermelon} Which of the following is correct?			
Ⓐ $A \subset Q$	Ⓑ $B \subset Q$	Ⓒ $C \subset Q$	Ⓓ $D \subset Q$
v. X={items which can be put in a Geometry box} Which of the following sets is not a subset of X?			
Ⓐ $A = \{\text{measuring tape}\}$	Ⓑ $B = \{\text{compass, ruler}\}$	Ⓒ $C = \{\text{compass, dividers}\}$	Ⓓ $D = \{2 \text{ set squares}\}$
vi. The set of whole numbers is			
Ⓐ finite	Ⓑ infinite	Ⓒ empty	Ⓓ none of these
vii. $A = \{5, 10, 15, 20, 25, \dots\}$ and $B = \{1, 2, 3, 4, 5, 6, 7, \dots\}$ Which of the following is true?			
Ⓐ $A = B$	Ⓑ $A \not\subset B$	Ⓒ $A \subset B$	Ⓓ The set of integers
viii. Which of the following statements is true?			
Ⓐ $Lilly \in \{\text{flowers in the pond}\}$	Ⓑ $Lilly \in \{\text{flowers that grow on trees}\}$	Ⓒ $Lilly \in \{\text{flowers that grow on plants}\}$	Ⓓ $Lilly \in \{\text{flowers that grow on trees}\}$

### 4. Words Search

Well-defined	Proper	Set builder	superset	diagram	set	disjoint	belongs	finite
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E	W	Z	E	R	G	R	E	P	U	P	O
S	E	V	N	X	F	L	D	J	E	R	U
T	L	P	R	O	P	E	R	I	U	O	P
Y	L	S	U	P	E	R	S	E	T	D	Y
U	D	X	P	Q	F	R	L	S	Y	I	T
S	E	T	B	U	I	L	D	E	R	S	J
R	F	L	E	I	N	W	I	T	D	J	H
P	I	S	L	O	I	S	A	Y	S	O	A
I	N	T	O	P	T	B	G	U	J	I	S
P	E	G	N	L	E	D	R	Q	A	N	D
J	D	R	G	D	S	K	A	W	Y	T	C
W	Q	L	S	S	V	M	M	P	U	S	A

### 5. Jumbled Words

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| i. ITOOTANN _____<br><br>iii. TECKARB _____<br><br>v. VITEGENA _____<br><br>vii. TUBESS _____<br><br>ix. TYMPE _____ | ii. NIPPALREGVO _____<br><br>iv. ECOBJETS _____<br><br>vi. TTINISCD _____<br><br>viii. EERMMB _____<br><br>x. RUBLAAT _____ |
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## 6. Columns

Match the descriptive form with the tabular form.

Descriptive form			Tabular form
Set of days in a week	●	●	{14,16,18,20}
Set of first five planets	●	●	{1,2,3,4,5,6,7,8,9}
Set of even numbers between 12 and 21	●	●	{Mercury, Venus, Earth, Mars, Jupiter}
Set of one-digit natural number	●	●	{Monday, Tuesday, Wednesday, ..}
Set of 2-digit numbers	●	●	{10,11,12,,,99}

7. Draw the Venn diagram of "Names of 5 boys starting with A and names of 5 girls starting with S".

**8. Fill in the blanks using the given words.**

- i. A unit set is also called a \_\_\_\_\_.
- ii. A set of all integers is an \_\_\_\_\_ set.
- iii. The symbol  $\emptyset$  represents an \_\_\_\_\_ set.
- iv. Two sets that contain the same number of elements are called \_\_\_\_\_ sets.
- v. A \_\_\_\_\_ set contains all the possible subsets of a set.
- vi. A proper subset is denoted by the symbol \_\_\_\_\_.
- vii. The number of elements in a set is called its \_\_\_\_\_.
- viii. Set  $A = \{1, 2, 3\}$  is a \_\_\_\_\_ of set  $B = \{1, 2, 3, 4\}$
- ix. Overlapping sets have at least one \_\_\_\_\_ element.
- x. The universal set for  $A = \{1, 3, 5\}$  and  $B = \{2, 4, 6\}$  is \_\_\_\_\_

**9. Identify the true and false statement from the following.**

- i. If  $A = \{a, b, c, d, e\}$  and  $B = \{b, d, e\}$  then  $B \subseteq A$  \_\_\_\_\_.
- ii. There can be no one-one correspondence in set  $A = \{A, B, C\}$  and set  $B = \{1, 2, 3\}$  \_\_\_\_\_.
- iii. Set  $A = \{\text{Japan, China, South Korea}\}$  and set  $B = \{\text{Mars, Earth, Jupiter, Uranus}\}$  are equivalent sets \_\_\_\_\_.
- iv. The power set includes a null set \_\_\_\_\_.
- v.  $P = \{1, 2, 3, \dots, 10\}$  is written as  $P = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$  in a set builder form \_\_\_\_\_.
- vi. A set of all the children in the school is a finite set \_\_\_\_\_.
- vii. A set of all the beautiful cities of the world is a well-defined set \_\_\_\_\_.
- viii. The symbol  $\in$  denotes a subset \_\_\_\_\_.
- ix. Set  $B$  is the superset of set  $A$  if set  $B$  contains all the elements of set  $A$  \_\_\_\_\_.
- x. The cardinality of set  $A = \{5, 10, 15, 20, 25\}$  is 30 \_\_\_\_\_.



**10. Drag and Drop**

Look at the symbols carefully and identify which symbols are used in sets and which are not.

$\notin$	$\subseteq$	$x $	$\div$	$\leq$
Does not belong to	Is a subset of	Such that	Division	Less than equal to
$*$	$\sim$	$>$	$\in$	$\times$
Asterisk	Are equivalent	Greater than	Belongs to	Multiplication

Symbols used in sets

Symbols not used in sets

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**11. Comprehension**

Sets are one of the most fundamental concepts in mathematics. A set is a collection of objects, and the order of the objects in a set does not matter. Sets can be defined in a variety of ways, including using roster notation, set-builder notation, and Venn diagrams. Roster notation is a way of defining a set by listing all of its elements between curly braces.

For example, the set of all even numbers can be defined as  $\{2, 4, 6, 8, \dots\}$ . Set-builder notation is a way of defining a set by describing the properties that its elements must satisfy. For example, the set of all even numbers can be defined as  $\{x \mid x \text{ is an integer and } x \text{ is divisible by } 2\}$ . Venn diagrams are a graphical way of representing sets.

A Venn diagram consists of a series of overlapping circles, each of which represents a set. The area of each circle represents the number of elements in the set. Sets are used in many different areas of mathematics, including set theory, logic, and combinatorics. They are also used in other fields, such as computer science and statistics.

Read the above paragraph carefully and answer the following questions.

i. What is a set?

Answer:

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ii. How many methods are there to represent a set?

Answer:

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iii. How can you use sets to solve mathematical problems?

Answer:

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iv. What is Roaster notation of a set?

Answer:

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v. What is the application of sets?

Answer:

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