MATHS

BOOKS - MODERN PUBLICATION

SETS

Example

1. Explain the difference between a collection and a set. Justify your answer.

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2. Write the set of all vowels in the English alphabet which precede r.

3. Write the set of all positive integers whose cube is odd.

4. Write the set of all real numbers , which can not be written as the quotient of two integers in the

Set Builder Form.

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5. Write the set $\left\{\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}\right\}$ in the Set Builder Form.

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6. Write the set {x : x is a positive integer and $x^2 < 40$} in the Roster Form.

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7. Write the set {1, 4, 9, 16, 25, ...} in Set Builder Form.

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8. Write the solution set of the equation : $x^2 + x - 2 = 0$ in Roster Form.

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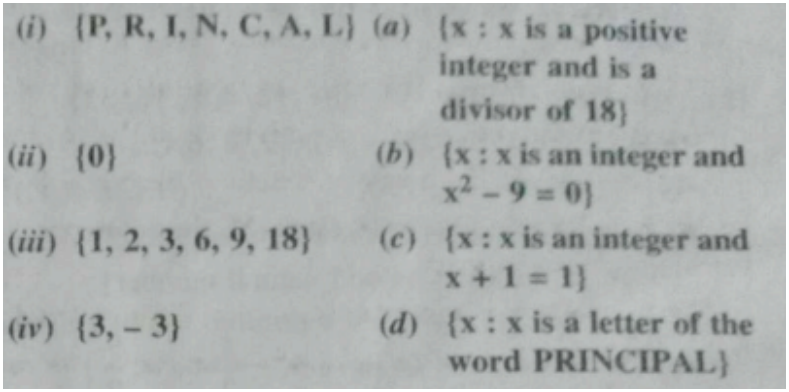
9. Match each of the set on the left in the Roster Form with the same set on the right described in

the Set Builder form :



(i)	{P, R, I, N, C, A, L}	(a)	{x : x is a positive integer and is a divisor of 18}
(ii)	{0}	(b)	{x : x is an integer and $x^2 - 9 = 0$}
(iii)	{1, 2, 3, 6, 9, 18}	(c)	{x : x is an integer and $x + 1 = 1$}
(iv)	{3, – 3}	(d)	{x : x is a letter of the word PRINCIPAL}

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10. Which of the following sets are finite or infinite:- The set of months of a year

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11. Which of the following sets are finite or infinite:- {1,2,3....}

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12. Which of the following sets are finite or infinite:- {1,2, 3,...99, 100}

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13. State whether each of the following set is finite or infinite: The set of numbers which are multiple

of 5

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14. State whether the following set is finite or infinite : The set of prime numbers less than 50.

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15. State whether the following set is finite or infinite : The set of positive integers greater than 50.

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16. State whether the following set is finite or infinite : The set of concentric circles in a plane.

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17. State whether the following set is finite or infinite : A= {x:x $\in$ N and $x^2 - 3x + 2 = 0$}

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18. State whether the following set is finite or infinite : B= {x:x $\in$ N and $x^2 = 9$}

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19. State whether the following set is finite or infinite : C= {x:x $\in$ N and x is even }

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20. State whether the following set is finite or infinite : D= {x:x $\in$ N and 2x-3=0}.

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21. Which of the following are examples of the null set :- Set of odd natural numbers divisible by 2

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22. Whether the following is empty (null) set?

$\{x:x < 5 \text{ and } x>7, x \in N\}$

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23. Whether the following is empty (null) set?

$\{x : x^2 = 25$ and x is an odd integer$\}$

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24. Whether the following is empty (null) set?

$\{x : x^2 - 2 = 0$ and x is rational$\}$

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25. Whether the following is empty (null) set?

{x:x is common point of any two parallel lines}.

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26. What is the set : $\{x : x \in R, x^2 = 9, 2x = 4\}$

?

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27. Find the pairs of equal sets from the following sets , if any, giving reason :

$A = \{0\}, B = \{x : x > 15 \text{ and } x < 5\},$

$C = \{x : x - 5 = 0\}, D = \{x : x^2 = 25\}, E = \{x : x$

is an integral positive root of the equation $x^2 - 2x - 15 = 0\}$.

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28. Are the following pairs of sets equal ? Give reasons.

A={2,3}, B={x:x is solution of $x^2 + 3x + 2 = 0$}

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29. Are the following pair of sets equal ? Give reasons. A = { x : x is a letter in the word FOLLOW}

B = { y : y is a letter in the word WOLF}

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30. Consider the following set : $\phi, A = \{1, 3\}, B = \{1, 5, 9\}, C = \{1, 3, 5, 7, 9\}$.

Insert the correct symbol $\subset$ or $\not\subset$ between pair of sets : ϕ..... . B.

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31. Consider the following set : $\phi, A = \{1, 3\}, B = \{1, 5, 9\}, C = \{1, 3, 5, 7, 9\}$.

Insert the correct symbol $\subset$ or $\not\subset$ between pair of sets : A.....B.

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32. Consider the following set : $\phi, A = \{1, 3\}, B = \{1, 5, 9\}, C = \{1, 3, 5, 7, 9\}$.

Insert the correct symbol $\subset$ or $\not\subset$ between pair of sets : A.....C.

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33. Consider the following set : $\phi, A = \{1, 3\}, B = \{1, 5, 9\}, C = \{1, 3, 5, 7, 9\}$. Insert the correct symbol $\subset$ or $\not\subset$ between pair of sets : B.....C.

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34. List all the subsets of the set {- 1, 0, 1}.

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35. Let A = {p, q, r,s}, B = {p, q, r} and C = {q, s}. Find all sets X such that : $X \subset B$ and $X \subset C$

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36. Let A = {p, q, r,s}, B = {p, q, r} and C = {q, s}. Find all sets X such that : $X \subset A$ and $X \not\subset B$.

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37. Let A, B and C be three sets. If $A \in B$ and $B \subset C$, is it true that $A \subset C$? If not, give an

example.

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38. Let A = {1, 2, 3, 4}, B = {1, 2, 3} and C = {2, 4}. Find all sets X satisfying pair of conditions : $X \subset B$ and $X \not\subset C$.

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39. Let A = {1, 2, 3, 4}, B = {1, 2, 3} and C = {2, 4}. Find all sets X satisfying pair of conditions : $X \subset B, X \neq B$ and $X \not\subset C$.

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40. Let A = {1, 2, 3, 4}, B = {1, 2, 3} and C = {2, 4}. Find all sets X satisfying pair of conditions : $X \subset A$, $X \subset B$ and $X \subset C$.

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41. Prove that $A \subset B, B \subset C \Rightarrow A \subset C$.

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42. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $1 \in A$

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43. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\{1, 2, 3\} \subset A$.

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44. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\{6, 7, 8\} \in A$.

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45. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\{\{4, 5\}\} \subset A$.

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46. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\phi \in A$.

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47. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\phi \subset A$.

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48. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $A \cup C$

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49. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $B \cup C$

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50. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $B \cup D$

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51. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $A \cup B \cup C$

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52. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $A \cup B \cup D$

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53. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 } and D = { 7, 8, 9, 10 }, find:- $B \cup C \cup D$

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54. If

$A_1 = \{2, 3, 4, 5\}, A_2 = \{3, 4, 5, 6\}, A_3 = \{4, 5, 6, 7\}$

, find $\cup A_i$ and $\cap A_i$, where i = {1, 2, 3}.

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55. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

A-B

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56. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:- B-C

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57. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:- C-D

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58. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

D-C

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59. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : A = {a, b, c}

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60. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : B={d, e, f, g}

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61. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : C = {a, c, e, g}

Watch Video Solution

62. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : D = {f, g, h, a}

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63. If U = {1, 2, 3, 4, 5, 6}, A = {1, 2}, B = {3, 4, 5}, find A^c, B^c, $A^c \cap B^c$ and $A \cup B$.

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64. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {1, 2, 3, 4}, B = {2, 4, 6, 8}. Find : A^c.

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65. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {1, 2, 3, 4}, B = {2, 4, 6, 8}. Find : B^c.

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66. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {1, 2, 3, 4}, B = {2, 4, 6, 8}. Find : $(A^c)^c$.

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67. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {1, 2, 3, 4}, B = {2, 4, 6, 8}. Find : $(A \cup B)^c$.

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68. If U ={x: x is a letter in Engtish alphabet} A={x : x is a vowel in English alphabet}. Find A^c and $(A^c)^c$.

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69. Let U = {1,2,3,4,5, 6,7, 8, 9, 10}, A = {1, 3, 5}, B = {2, 4, 6}, C = {4, 5, 6}. Find $A^c \cap B^c$

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70. Let U = {1,2,3,4,5, 6,7, 8, 9, 10}, A = {1, 3, 5}, B = {2, 4, 6}, C = {4, 5, 6}. Find $(A \cup B)^c \cap C^c$.

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71. Let A = {1, 2, 3, 4, 5, 6} B = {3, 4,5, 6, 7, 8}. Find $(A - B) \cup (B - A)$.

Watch Video Solution

72. If U = {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {1,2,3,4}, B= {2, 4, 6,8} and C= {3,4,5 ,6}. Find : A^c.

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73. Let U = { 1, 2, 3, 4, 5, 6, 7, 8, 9 }, A = { 1, 2, 3, 4}, B = { 2, 4, 6, 8 } and C = { 3, 4, 5, 6 }. Find:- B'

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74. Let U = { 1, 2, 3, 4, 5, 6, 7, 8, 9 }, A = { 1, 2, 3, 4}, B = { 2, 4, 6, 8 } and C = { 3, 4, 5, 6 }. Find:- $(A \cup C)'$

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75. Let U = { 1, 2, 3, 4, 5, 6, 7, 8, 9 }, A = { 1, 2, 3, 4}, B = { 2, 4, 6, 8 } and C = { 3, 4, 5, 6 }. Find:- $(A \cup C)'$

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76. Let U = { 1, 2, 3, 4, 5, 6, 7, 8, 9 }, A = { 1, 2, 3, 4}, B = { 2, 4, 6, 8 } and C = { 3, 4, 5, 6 }. Find:- (A')'

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77. Let U = { 1, 2, 3, 4, 5, 6, 7, 8, 9 }, A = { 1, 2, 3, 4}, B = { 2, 4, 6, 8 } and C = { 3, 4, 5, 6 }. Find:- (B -C)'

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78. If U ={1,2, 3, 4, 5, 6, 7, 8, 9 }, A = {2, 4, 6, 8} and B = { 2, 3, 5, 7}. Verify that $(A \cup B)' = A' \cap B'$

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79. If U ={1,2, 3, 4, 5, 6, 7, 8, 9 }, A = {2, 4, 6, 8} and B = { 2, 3, 5, 7}. Verify that $(A \cap B)' = A' \cup B'$

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80. If A = {1, 2, 3}, B= { 4, 5, 6} and C= { 7, 8, 9}, verify that : $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.

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81. If $A \cap B^c = \phi$, show that $A \subset B$.

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82. If A and B are any two sets, prove that : $A - B = A \cap B^c$.

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83. If A and B are any two sets, prove that :

$(A - B) \cup B = A \cup B.$

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84. Show that :

$(A \cup B) - (A \cap B) = (A - B) \cup (B - A).$

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85. If A, B and C are any three sets, then prove that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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86. If A, B and C are any three sets, then prove that : $A \cap (B \Delta C) = (A \cap B) \Delta (A \cap C)$.

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87. Prove the following : $A \subset B \Leftrightarrow B^c \subset A^c$.

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88. Prove the following : $B \subset A \Rightarrow A \cup B = A$.

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89. Prove the following : $A - B = A - (A \cap B)$.

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90. Prove the following : $U - (U - A) = (A^c)^c = A$, where U is the universal set.

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91. Shade the following : $A^c \cap (B \cup C)$ in the given Venn diagram.

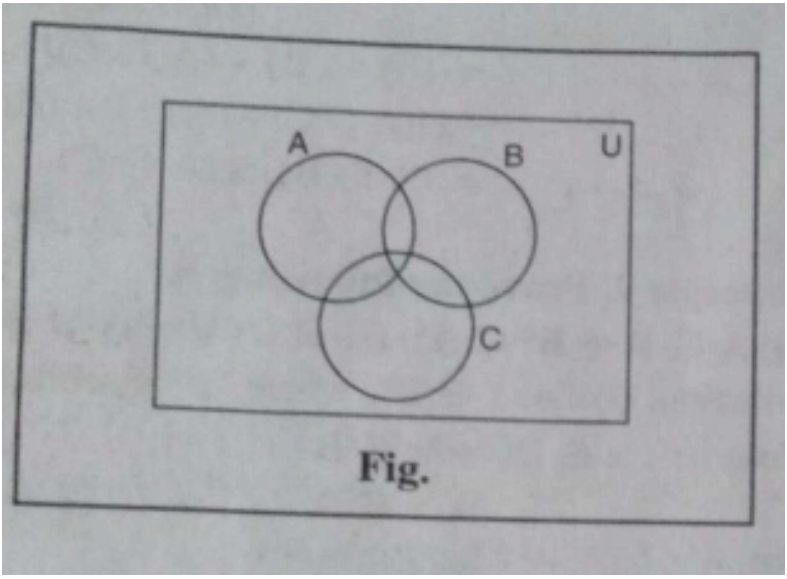

Fig.

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92. Shade the following : $A^c \cap (C - B)$ in the given Venn diagram.

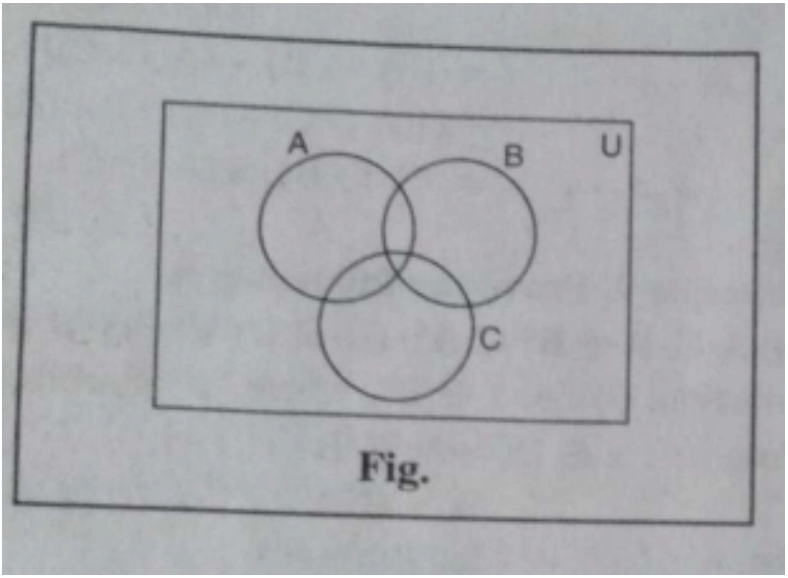

Fig.

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93. If X and Y are two sets such that n (X) = 17, n (Y) = 23 and $n(X \cup Y) = 38$, find $n(X \cap Y)$.

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94. A and B are two sets containing respectively m_1 and m_2 elements. If $x \leq n(A \cup B) \leq y$, find x and y.

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95. If A and B be two sets containing 6 and 3 elements respectively, what can be the minimum number of elements in $A \cup B$? Also, find the maximum number of elements in $A \cup B$.

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96. Two finite sets have m and n elements. The total number of subsets of the first set is 56 more than the total number of subsets of the second set. Find the values of m and n.

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97. Out of 20 members in a family, 11 like to take tea and 14 like coffee. Assume that each one likes

at least one of the two drinks. How many like : both tea and coffee?

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98. There are 20 students in a Chemistry class and 30 students in a Physics class. Find the number of students which are either in Physics class or Chemistry class in the following case : the classes meet at the same hour.

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99. There are 20 students in a Chemistry class and 30 students in a Physics class. Find the number of students which are either in Physics class or Chemistry class in the following case : the two classes meet at different hours and ten students are rolled in both the subjects.

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100. In a survey of 400 students in a school, 100 were listed as drinking apple juice, 150 as drinking orange juice and 75 were listed as both drinking

apple as well as orange juice. Find how many students were drinking neither apple juice nor orange juice.

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101. A market research group conducted a survey of 1000 consumers and reported that 720. consumers liked product A and 450 liked product B. What is the least number that must have like both products ?

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102. Out of 500 car owners investigated, 400 owned car A and 200 owned car B, 50 pwned both A and B cars. Is the data correct ?

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103. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product C. If 14 people liked products Aand B, 12 people liked products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked product C only.

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104. There are 200 individuals with in skin disorder. 120 had been exposed to the chemical C_1, 50 to chemical C_2 and 30 to both the chemicals C_1 and C_2. Find the number of individuals exposed to :

Chemical C_1 but not chemical C_2

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105. There are 200 individuals with in skin disorder. 120 had been exposed to the chemical

C_1, 50 to chemical C_2 and 30 to both the chemicals C_1 and C_2. Find the number of individuals exposed to :

Chemical C_2 but not chemical C_1

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106. There are 200 individuals with in skin disorder. 120 had been exposed to the chemical C_1, 50 to chemical C_2 and 30 to both the chemicals C_1 and C_2. Find the number of individuals exposed to :

Chemical C_1 or chemical C_2.

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107. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

only Chemistry.

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108. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

only Mathematics.

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109. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics

and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

only Physics.

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110. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and

Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

Physics and Chemistry but not Mathematics.

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111. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of

students that had taken :

Mathematics and Physics but not Chemistry.

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112. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

only one of the subjects.

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113. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

at least one of three subjects.

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114. In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had takes Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all three subjects. Find the number of students that had taken :

none of the three subjects.

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Exercise

1. Which of the following are sets ? Justify your answer. The collection of all the months of a year beginning with the letter J.

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2. Which of the following are sets ? Justify your answer. The collection of ten most talented writers of India.

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3. A team of good hockey players of the world is a set or collection?

Watch Video Solution

4. The collection of all students in your class is set or collection

Watch Video Solution

5. Which of the following are sets ? Justify your answer. The collection of all natural numbers less

than 100.

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6. Which of the following are sets ? Justify your answer. A collection of novels written by the writer Munshi Prem Chand.

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7. Which of the following are sets ? Justify your answer. The collection of all even integers.

Watch Video Solution

8. Which of the following are sets ? Justify your answer. The collection of questions in this Chapter.

Watch Video Solution

9. Which of the following are sets ? Justify your answer. A collection of most dangerous animals of the world.

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10. Let A = {1, 2, 3, 4, 5, 6}. Insert the appropriate symbol $\in$ or $\notin$ in the blank space: 5. . .A

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11. Let A = {1, 2, 3, 4, 5, 6). Insert the appropriate symbol $\in$ or $\notin$ in the following blank space : 8 ..... A

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12. Let A = {1, 2, 3, 4, 5, 6). Insert the appropriate symbol $\in$ or $\notin$ in the following blank space : 0 ..... A

Watch Video Solution

13. Let A = {1, 2, 3, 4, 5, 6). Insert the appropriate symbol $\in$ or $\notin$ in the following blank space : 4 ..... A

Watch Video Solution

14. Let A = {1, 2, 3, 4, 5, 6). Insert the appropriate symbol $\in$ or $\notin$ in the following blank space : 2 ..... A

Watch Video Solution

15. Let A = {1, 2, 3, 4, 5, 6). Insert the appropriate symbol $\in$ or $\notin$ in the following blank space : 10 ..... A.

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16. Write the following set in roster form: $A = \{x : x$ is an integer and $-3 < x < 7\}$

Watch Video Solution

17. Write the following set in roster form: $B = \{x : x$ is a natural number less than $6\}$

Watch Video Solution

18. Write the following set in roster form: $C = \{x : x$ is a two-digit natural number such that the sum

of its digits is 8}

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19. Write the following set in roster form: D = {x : x is a prime number which is divisor of 60}

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20. Write the following set in roster form: E = The set of all letters in the word TRIGONOMETRY

Watch Video Solution

21. Write the following set in roster form: F = The set of all letters in the word BETTER

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22. Write the following set in Set Builder Form : A= {0}.

Watch Video Solution

23. Write the following set in Set Builder Form : B= {-1,1}.

Watch Video Solution

24. Write the following set in Set Builder Form : C= {1,3,5,7,9}.

Watch Video Solution

25. Write the following set in Set Builder Form : D= {2, 4,6, 8}.

Watch Video Solution

26. Write the following set in Set Builder Form : E= {0,5, 10, 15, ...}.

Watch Video Solution

27. Write the following set in Set Builder Form : F= (12, 18, 24, ...,96}.

Watch Video Solution

28. Write the following set in the set-builder form : {3,6,9,12}

Watch Video Solution

29. Write the following set in the set-builder form : {2,4,8,16,32}

Watch Video Solution

30. Write the following set in the set-builder form : {5,25,125,625}

Watch Video Solution

31. Write the following set in the set-builder form :

{2,4,6....}

Watch Video Solution

32. Write the following set in the set-builder form : {1,4,9,...,100}

Watch Video Solution

33. List all the elements of the following set : A = {x : x is an odd natural number}

Watch Video Solution

34. List all the elements of the following set : B = {x : x is an integer, $-\frac{1}{2} < x < \frac{9}{2}$}

Watch Video Solution

35. List all the elements of the following set : C = {x : x is an integer, $x^2 \leq 4$}

Watch Video Solution

36. List all the elements of the following set : D = {x : x is a letter in the word “LOYAL”}

37. List all the elements of the following set : E = {x : x is a month of a year not having 31 days}

38. List all the elements of the following set : F = {x : x is a consonant in the English alphabet which

precedes k }.

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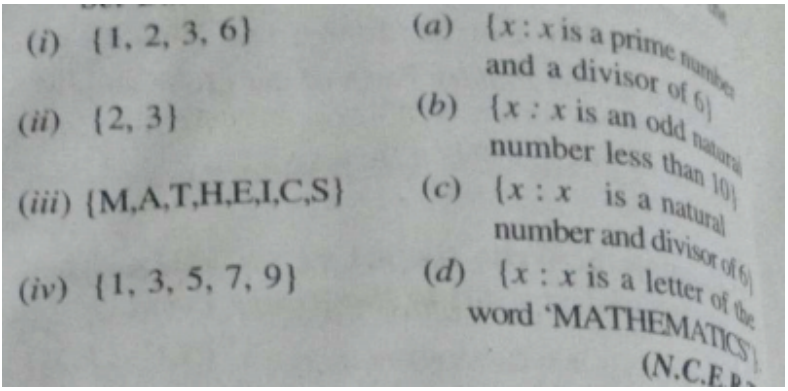
39. Match each of the sets on the left in the Roster Form with the same set on the right described in the Set Builder Form :



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40. Write the set of all vowels in the English alphabet which precede q.

Watch Video Solution

41. Write the set of all integers whose cube is an even integer.

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42. Write the set $\left\{\frac{1}{2}, \frac{2}{5}, \frac{3}{10}, \frac{4}{17}, \frac{5}{26}, \frac{6}{37}, \frac{7}{50}, \frac{8}{65}\right\}$ in the Set

Builder Form.

Watch Video Solution

43. Write the set {x : x is a positive integer and $x^2 < 40$} in the Roster Form.

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44. State whether the following set is finite or infinite : The set of days of a week.

Watch Video Solution

45. Which of the following sets are finite or infinite:- The set of prime numbers less than 99

Watch Video Solution

46. Which of the following sets are finite or infinite:- The set of positive integers greater than 100

Watch Video Solution

47. State whether each of the following set is finite or infinite: The set of lines which are parallel to the x-axis

Watch Video Solution

48. State whether each of the following set is finite or infinite: The set of letters in the English alphabet

Watch Video Solution

49. State whether each of the following set is finite or infinite: The set of animals living on the earth

Watch Video Solution

50. State whether each of the following set is finite or infinite: The set of circles passing through the origin (0,0)

Watch Video Solution

51. State whether the following set is finite or infinite : A= {x:x $\in$ N and (x - 1) (x- 2) =0}.

Watch Video Solution

52. State whether the following set is finite or infinite : B= {x:x $\in$ N and $x^2 = 4$}.

Watch Video Solution

53. State whether the following set is finite or infinite : C= {x:x $\in$ N and 2x-1 = 0}.

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54. State whether the following set is finite or infinite : $E = \{x : x \in N \text{ and } x \text{ is prime}\}$.

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55. State whether the following set is finite or infinite : $D = \{x : x \in N \text{ and } x \text{ is odd}\}$.

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56. Which of the following are examples of the null set :- Set of even prime numbers

Watch Video Solution

57. Whether the following is empty (null) set?

Set of all even natural numbers divisible by 5.

Watch Video Solution

58. Whether the following is empty (null) set? $\{x:5 < x < 6, x \text{ in } N\}$

Watch Video Solution

59. Whether the following is empty (null) set?

$\{x : x^2 = 25$ and x is an even integer$\}$.

Watch Video Solution

60. Whether the following is empty (null) set?

$\{x : x^2 - 2 = 0$ and x is rational$\}$

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61. In the following, state whether A = B or not: A= {a,b, c,d} B = { d, c, b,a }

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62. In the following, state whether A = B or not: A = { 4, 8, 12, 16 } B = {8,4, 16,18}

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63. In the following, state whether A = B or not: A = {2.4, 6, 8, 10} B = { x : x is positive even integer and

$x \leq 10\}$

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64. In the following, state whether A = B or not: A = { x : x is a multiple of 10}, B = { 10, 15,20,25,30, . . . }

Watch Video Solution

65. Are the following pair of sets equal ? Give reasons. A={2, 3}, B= {x : x is solution of x^2 + 5x + 6 = 0}

Watch Video Solution

66. Are the following sets equal ? Give reasons: A = {n :n $\in$ Z and $n^2 \leq 4$}, B= {x:x $\in$ R and $x^2 - 3x + 2 = 0$}

Watch Video Solution

67. Are the following sets equal ? Give reasons: A = {x:x is a letter in the word 'LOYAL' } B = {x:x is a letter in the word 'ALLOY' }.

Watch Video Solution

68. Show that the set of letters needed to spell "CATARACT" and the set of letters needed to spell "TRACT" are equal.

Watch Video Solution

69. From the sets given below, select equal sets : A = { 2, 4, 8, 12}, B = { 1, 2, 3, 4}, C = { 4, 8, 12, 14}, D = { 3, 1,4,2} E={-1,1}, F = { 0, a}, G= {1,-1}, H = { 0, 1}

Watch Video Solution

70. From the sets given below, select equal sets : A = { 2, 4, 8, 12}, B = { 1, 2, 3, 4}, C = { 4, 8, 12, 14}, D = { 3, 1,4,2} E={-1,1}, F = { 0, a}, G= {1,-1}, H = { 0, 1}

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71. Which of the following sets are equal ? A= {x:x $\in$ N,x <4), B= {1,2, 3}, C={1 ,3}, D = {x:x $\in$ N, x is odd, x < 5}, E= {1,2, 3, 2}, F = {3,3,1}.

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72. Which of the following sets are equal ? A= {x:x $\in$ N,x <3), B= {1,2}, C={3,1}, D = {x:x $\in$ N, x is odd, x < 5}, E= {1,2 ,1}, F = {1,1,3}.

Watch Video Solution

73. Whether the following statement is true or false ?

{a,e,o}= {i,u,a}.

Watch Video Solution

74. Whether the following statement is true or false ?

$\{5, 1,3\}= \{1,3,5\}$.

Watch Video Solution

75. Whether the following statement is true or false ?

$\{x:x \in N, x \text{ is a multiple of } 5 \} = \{5, 10, 15, 20,....\}$.

Watch Video Solution

76. Whether the following statement is true or false ?

(x: x is an even prime} = {2}.

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77. Examine whether the following statement is true or false: { a, b } $\not\in$ { b, c, a }

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78. Examine whether the following statement is true or false: {a,e) $\subset$ {x:xisa vowel in the English alphabet)

Watch Video Solution

79. Examine whether the following statement is true or false: { 1,2,3 } $\subset$ { 1,3, 5}

Watch Video Solution

80. Examine whether the following statement is true or false: $\{a\} \subset \{a, b. c\}$

Watch Video Solution

81. Examine whether the following statement is true or false: $\{a\} \in \{a, b, c\}$

Watch Video Solution

82. Examine whether the following statement is true or false: { x : x is an even natural number less

than 6) $\subset$ { x : x is a natural number which divides 36}

Watch Video Solution

83. Whether the following statement is true ? Justify your answer.

The set of dogs is contained in the set of animals.

Watch Video Solution

84. Whether the following statement is true ? Justify your answer.

The set of all isosceles triangles is contained in the set of all equilateral triangles.

Watch Video Solution

85. Whether the following statement is true ? Justify your answer.

The set of all rectangles is contained in the set of squares.

Watch Video Solution

86. Whether the following statement is true ? Justify your answer.

The set A = {2} and B= {{2}} are equal.

Watch Video Solution

87. Whether the following statement is true ? Justify your answer.

The sets A = {x: x is letter in the word 'LITTLE' }, and B= (x: x is a letter in the word "TITLE"} are equal.

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88. Whether the following statement is true ? Justify your answer.

For any two sets A and B either $A \subseteq B$ or $B \subseteq A$.

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89. Whether the following statement is true ? Justify your answer.

Every set has a proper subset.

Watch Video Solution

90. Whether the following statement is true ? Justify your answer.

If $x \in A$ and $A \in B$, then $x \in B$.

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91. Whether the following statement is true ? Justify your answer.

If $A \subset B$ and $B \in C$,then $A \in C$.

Watch Video Solution

92. Whether the following statement is true ? Justify your answer.

If $A \subset B$ and $B \subset C$,then $A \subset C$.

Watch Video Solution

93. Whether the following statement is true ? Justify your answer.

If $A \not\subset B$ and $B \not\subset C$,then $A \not\subset C$.

Watch Video Solution

94. Whether the following statement is true ?

Justify your answer.

If $x \in A$ and $A \not\subset B$, then $x \in B$.

Watch Video Solution

95. Whether the following statement is true ?

Justify your answer.

If $A \subset B$ and $x \notin B$,then $x \notin A$.

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96. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{3, 4\} \subset A.$

Watch Video Solution

97. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{3, 4\} \subset A.$

Watch Video Solution

98. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{3, 4\} \subset A.$

Watch Video Solution

99. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$1 \in A.$

Watch Video Solution

100. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$1 \subset A.$

Watch Video Solution

101. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{1, 2, 5\} \subset A.$

Watch Video Solution

102. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{1, 2, 5\} \in A.$

Watch Video Solution

103. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{1, 2, 3\} \subset A.$

Watch Video Solution

104. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\phi \in A.$

Watch Video Solution

105. Let A ={1,2 {3,4},5}. State whether the following statement is incorrect and why ?

$\{\phi\} \subset A.$

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106. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\phi \in A$.

Watch Video Solution

107. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\phi \subset A$.

Watch Video Solution

108. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false . Justify your

answer .

$1 \in A$.

Watch Video Solution

109. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false : $\{1, 2, 3\} \subset A$.

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110. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false :

$\{6, 7, 8\} \in A.$

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111. Let A = {{1, 2, 3}, {4, 5}, {6, 7, 8}}. Determine whether the following is true or false . Justify your answer .

$\{\{4, 5\}\} \subset A.$

Watch Video Solution

112. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\phi \in A$.

Watch Video Solution

113. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer . $\{\phi\}$in A.

Watch Video Solution

114. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer . $\{2\} \in A$.

Watch Video Solution

115. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\{5, \phi\} \subset A.$

Watch Video Solution

116. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$5 \subset A.$

Watch Video Solution

117. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\{\{5\}, \{2\}\}$ $(\not\subset)$ A.

Watch Video Solution

118. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\{\{5\}, \{2\}\}$ $(\not\subset)$ A.

Watch Video Solution

119. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\{\phi, \{\phi\}, 2, \{2, \phi\}\} \subset A.$

Watch Video Solution

120. Let A = $\{\phi, \{\phi\}, 2, \{2, \phi\}, 5\}$. State whether the following is true of false? Justify your answer .

$\{\{\phi\}\} \subset A.$

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121. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : { 2, 3, 4 } . . . { 1, 2, 3, 4,5 }

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122. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : { a, b, c } . . . { b, c, d }

Watch Video Solution

123. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : {x : x is an even natural number) ... {x : x is an integer)

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124. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : {x : x is a triangle in a plane) . . . {x : x is a rectangle in the plane)

Watch Video Solution

125. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : {x : x is an equilateral triangle in a plane) ... {x : x is a triangle in the same plane)

Watch Video Solution

126. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : {x : x is a circle in the plane) . . .{x : x is a circle in the same plane with radius 1 unit)

Watch Video Solution

127. Make correct statements by filling in the symbols $\subset$ or $\not\subset$ in the blank spaces : {x : x is a student of Class XI of your school). . .{x : x student of your school)

Watch Video Solution

128. Write down all the subsets of the following set :- ϕ

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129. Write down all the subset of the following set

:

{1}.

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130. Write down all the subsets of the following

set :- {1,2,3}

Watch Video Solution

131. Write down all the subset of the following set

:

{1, {1}}.

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132. Write down all the subsets of the following

set :- {a}

Watch Video Solution

133. Write down all the subset of the following set

:

{a, b}.

Watch Video Solution

134. Write down all the subset of the following set

:

{a, b, c} .

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135. What is the total number of proper subsets of a set containing n elements ?

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136. Write down the power set of the following :

{0} .

Watch Video Solution

137. Write down the power set of the following :

{1, 2, 3}.

Watch Video Solution

138. How many elements has P(A), if $A = \phi$?

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139. Write the following as intervals : $\{x : x \in R, \ -4 < x \leq 6\}$

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140. Write the following as intervals :

$\{x : x \in R, \ -12 < x < \ -10\}$

Watch Video Solution

141. Write the following as intervals :

$\{x : x \in R, 0 \leq x < 7\}$

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142. Write the following as intervals :

$\{x : x \in R, 3 \leq x \leq 4\}$

Watch Video Solution

143. Write the following interval in set-builder form : (-3,0)

Watch Video Solution

144. Write the following interval in set-builder form : [6,12]

Watch Video Solution

145. Write the following interval in set-builder form : [6,12]

Watch Video Solution

146. Write the following interval in set-builder form : [-23,5)

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147. What universal set(s) would you propose for each of the following : (i) The set of right

triangles. (ii) The set of isosceles triangles.

Watch Video Solution

148. What universal set(s) would you propose for each of the following : (i) The set of right triangles. (ii) The set of isosceles triangles.

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149. Given the sets A = {1, 3, 5), B = {2, 4, 6} and C = {0, 2, 4, 6, 8), which of the following may be considered as universal set (s) for all the three

sets A, B and C (i) {0,1, 2, 3, 4, 5, 6} (ii) ϕ (iii) {0,1,2,3,4,5,6,7,8,9,10} (iv) {1,2,3,4,5,6,7,8}

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150. Decide, among the following sets, which sets are subsets of one and another: A = { x : x $\in$ R and x satisfy $x^2 - 8x + 12 = 0$ }, B = { 2, 4, 6 }, C = { 2, 4, 6, 8, . . . }, D = { 6 }.

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151. Prove that $A \subset \phi$ implies $A = \phi$.

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152. Let A, B and C be three sets. If $A \in B$ and $B \subset C$, is it true that $A \subset C$? If not, give an example.

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153. Prove that $A \subset B, B \subset C \Rightarrow A \subset C$.

Watch Video Solution

154. Prove that $A \subseteq B, B \subseteq C$ and $C \subseteq A \Rightarrow A = C.$

Watch Video Solution

155. If A= {1, 2, 3, 4}, B = {3, 4, 5, 6}, C = {5, 6, 7, 8 }and D = { 7, 8, 9, 10 }, find:- $A \cup B$

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156. Which of the following pairs of sets are disjoint:- {1, 2. 3, 4} and {x : x is a natural number

and $4 \leq x \leq 6$ }

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157. Which of the following pairs of sets are disjoint:- { a, e, i, o, u } and { c, d, e, f}

Watch Video Solution

158. Which of the following pairs of sets are disjoint:- {x : x is an even integer } and {x : x is an odd integer}

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159. State the following statement is true or false. Justify your answer. { 2, 3, 4, 5 } and { 3, 6} are disjoint sets.

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160. State the following statement is true or false. Justify your answer. { 2, 6, 10 } and { 3, 7, 11} are disjoint sets.

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161. State the following statement is true or false. Justify your answer. { 2, 6, 10, 14 } and { 3, 7, 11, 15} are disjoint sets.

Watch Video Solution

162. State whether the following statement is true of false . Justify your answer.

{a, b, c, d} and {a, e, i, o, u} are disjoint sets.

Watch Video Solution

163. Find the (a) union (b) intersection of the following pair of sets :

$A = \{2,4,6,8\}$, $B = \{6, 8, 10, 12\}$.

Watch Video Solution

164. Find the (a) union (b) intersection of the following pair of sets :

$A = \{1,3,5\}$, $B = \{1,2,3\}$.

Watch Video Solution

165. Find the (a) union (b) intersection of the following pair of sets :

A = {a,b,c}: B = {a, e, i, o, u}.

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166. Find the (a) union (b) intersection of the following pair of sets :

A = {1,2,3}, $B = \phi$.

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167. Find the (a) union (b) intersection of the following pair of sets :

A = {x:.x is a natural number and multiple of 3}, B = {x:.x is a natural number less than 6}.

Watch Video Solution

168. Find the union of each of the following pairs of set : A = {x : x is a natural number and $1 < x \leq 6$ } B = {x : x is a natural number and 6 < x < 10 }

Watch Video Solution

169. Find the (a) union (b) intersection of the following pair of sets :

A = $\{x : x \in Z^+$ and $x^2 > 7\}$, B={1, 2,3}.

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170. Find the (a) union (b) intersection of the following pair of sets :

A = $\{x : x \in Z^+\}$, B= $\{x : x \in Z$ and x<0}.

Watch Video Solution

171. Find the (a) union (b) intersection of the following pair of sets :

A = $\{x : x \in N \text{ and } 1 < x \leq 4\}$, B= $\{x : x$ in N and $4<x<9\}$`.

Watch Video Solution

172. Let A = {a,e,i, o, u} and B= {a, i, u}. Show that $A \cup B = A$.

Watch Video Solution

173. Let A = {1,2, 3,4, 5, 6, 7, 8, 9, 10} and B = {2, 3,5, 7}. Find $A \cap B$ and prove that $A \cap B = B$.

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174. Let X = {Ram, Geeta, Akbar} be the set of students of XI class who are in School Hockey team. Let Y = {Geeta, David, Ashok} be the set of students of XI class who are in School Football team. Find $X \cup Y$ and $X \cap Y$ and interpret the set.

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175. Let A = { a, b }, B = {a, b, c}. Is A $\subset$ B ? What is A $\cup$ B?

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176. If A and B are two sets such that $A \subset B$, then what is $A \cup B$?

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177. Prove that $A \cup B = A \cap B$ implies A=B.

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178. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap B$

Watch Video Solution

179. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $B \cap C$

Watch Video Solution

180. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap C$

Watch Video Solution

181. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $B \cap D$

Watch Video Solution

182. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap D$

Watch Video Solution

183. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap (B \cup C)$

Watch Video Solution

184. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap C \cap D$

Watch Video Solution

185. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $A \cap (B \cup D)$

Watch Video Solution

186. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $(A \cap B) \cap (B \cup C)$

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187. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15}andD = {15, 17}, find:- $(A \cup D) \cap (B \cup C)$

Watch Video Solution

188. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural number}and D = {x : x is a prime number }, find :- $A \cap B$

Watch Video Solution

189. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural

number}and D = {x : x is a prime number }, find :-

$B \cap C$

Watch Video Solution

190. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural number}and D = {x : x is a prime number }, find :-

$B \cap D$

Watch Video Solution

191. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural number}and D = {x : x is a prime number }, find :-

$A \cap C$

Watch Video Solution

192. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural number}and D = {x : x is a prime number }, find :-

$A \cap D$

Watch Video Solution

193. If A = {x : x is a natural number }, B = {x : x is an even natural number} C = {x : x is an odd natural number}and D = {x : x is a prime number }, find :- $C \cap D$

Watch Video Solution

194. Let $A = \{x : x \in Z^+\}$, B $=$ {x:x is a multiple of 3, x in Z}, C $=$ {x:x is a negative integer}, D $=$ {x:x is an odd integer}. Find : A $\cap$ B`.

Watch Video Solution

195. Let $A =$ {x: x in Z^+}, $B =$ {x:x is a multiple of 3, x $\in$ Z}, $C =$ {x:x is a negative integer}, $D =$ {x:x is an odd integer}. Find : B $\cap$ C`.

Watch Video Solution

196. Let $A =$ {x: x in Z^+}, $B =$ {x:x is a multiple of 3, x $\in$ Z}, $C =$ {x:x is a negative integer}, $D =$ {x:x is an odd integer}. Find : C $\cap$ D`.

Watch Video Solution

197. Let $A = \{x: x \text{ in } Z^+\}$, $B = \{x:x \text{ is a multiple of } 3, x \in Z\}$, $C = \{x:x \text{ is a negative integer}\}$, $D = \{x:x \text{ is an odd integer}\}$. Find : $A \cap C`$.

Watch Video Solution

198. Let $A = \{x: x \text{ in} Z^+\}$, $B = \{x:x \text{ is a multiple of } 3, x \in Z\}$, $C = \{x:x \text{ is a negative integer}\}$, $D = \{x:x \text{ is an odd integer}\}$. Find : $A \cap D`$.

Watch Video Solution

199. Let $A = \{x: x \text{ in } Z^+\}$, $B = \{x:x \text{ is a multiple of } 3, x \in Z\}$, $C = \{x:x \text{ is a negative integer}\}$, $D = \{x:x \text{ is an odd integer}\}$. Find : $B \cap D`$.

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200. If $N_k = \{k_n : n \in N\}$, find $N_3 \cap N_5$ and $N_4 \cap N_6$.

Watch Video Solution

201. If $N_a = \{a_n \mid n \in N\}$, describe $N_4 \cap N_6$ and $N_3 \cap N_5$.

Watch Video Solution

202. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

A-B

Watch Video Solution

203. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

A-C

Watch Video Solution

204. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

A-D

Watch Video Solution

205. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

B-A

Watch Video Solution

206. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

C-A

Watch Video Solution

207. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

D-A

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208. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

B-C

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209. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

B-D

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210. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

C-B

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211. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

D-B

Watch Video Solution

212. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:-

C-D

Watch Video Solution

213. If A= {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }, find:- D-C

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214. If X= { a, b, c, d } and Y ={f, b, d, g}, find:- X-Y

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215. If X= { a, b, c, d } and Y ={f, b, d, g}, find:- Y-X

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216. If X= { a, b, c, d } and Y ={f, b, d, g}, find:- $X \cap Y$

Watch Video Solution

217. If R is the set of real numbers and Q is the set of rational numbers, then what is R-Q?

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218. Let V={a,e, i,o, u} and B (a, i, k, u}. Find: V -B and B - V.

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219. Let A= {1, 2, 3, 4, 5, 6} and B = {2, 4, 6, 8}. Find : A - B and B - A. Show that $A - B \neq B - A$.

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220. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : A = {a, b, c}

Watch Video Solution

221. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : B={d, e, f, g}

Watch Video Solution

222. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : C = {a, c, e, g}

Watch Video Solution

223. If U = { a, b, c, d, e, f, g, h}, find the complements of the following set : D = {f, g, h, a}

Watch Video Solution

224. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is an odd natural number }

Watch Video Solution

225. Taking the set of natural numbers as the universal set, write down the complements of the following set: {x : x is an even natural number}

Watch Video Solution

226. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a prime number }

Watch Video Solution

227. Let N be the universal set. Write the complement of the following set :

{x: x $\in$ N and x = 3n for some n $\in$ N}.

Watch Video Solution

228. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a perfect square }

Watch Video Solution

229. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a perfect cube}

Watch Video Solution

230. Let N be the universal set. Write the complement of the following set :

$\{x: x \in N \text{ and } x+5=7\}$.

Watch Video Solution

231. Let N be the universal set. Write the complement of the following set :

$\{x: x \in N \text{ and } 2x+5=11\}$.

Watch Video Solution

232. Let N be the universal set. Write the complement of the following set :

{x: x $\in$ N and $x \geq 6$}.

Watch Video Solution

233. Taking the set of natural numbers as the universal set, write down the complements of the following set: {x : x is a natural number divisible by 3 and 5}

Watch Video Solution

234. Fill in the blanks to make the following a true statement : $A \cup A' = \ldots$

Watch Video Solution

235. Fill in the blanks to make the following a true statement : $\phi' \cap A = \ldots$

Watch Video Solution

236. Fill in the blanks to make the following a true statement : $A \cap A' = \ldots$

Watch Video Solution

237. Fill in the blanks to make the following a true statement : $U' \cap A = \ldots$

Watch Video Solution

238. Taking the set of natural numbers as the universal set, write down the complements of the following set: {x : x is an even natural number}

Watch Video Solution

239. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is an odd natural number }

Watch Video Solution

240. Taking the set of natural numbers as the universal set, write down the complements of the following set: {x : x is a positive multiple of 3}

Watch Video Solution

241. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a prime number }

Watch Video Solution

242. Taking the set of natural numbers as the universal set, write down the complements of the following set: {x : x is a natural number divisible by 3 and 5}

Watch Video Solution

243. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a perfect square }

Watch Video Solution

244. Taking the set of natural numbers as the universal set, write down the complements of the following set: { x : x is a perfect cube}

Watch Video Solution

245. Taking the set of natural numbers as the universal set, write down the complements of the following set: $\{x : x + 5 = 8\}$

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246. Taking the set of natural numbers as the universal set, write down the complements of the following set: $\{x : 2x + 5 = 9\}$

Watch Video Solution

247. Taking the set of natural numbers as the universal set, write down the complements of the following set: $\{x : x \geq 7\}$

Watch Video Solution

248. Taking the set of natural numbers as the universal set, write down the complements of the following set: $\{ x : x \in N \text{ and } 2x + 1 > 10 \}$

Watch Video Solution

249. If U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10} and A = {1, 3, 5, 7, 9}. Find A'.

Watch Video Solution

250. Let U be universal set of all students of class XI of a co-educational school and A be the set of all girls in class XI. Find A'.

Watch Video Solution

251. Let U be the set of all triangles in a plane. If A is the set of all triangles with at least one angle different from 60°, what is A'?

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252. Let A = {1, 2, 3, 4}, B = {4, 6, 7, 8} and C = {2, 4, 6, 8}. Verify the following identity :

$(A \cup B) \cup C = A \cup (B \cup C)$.

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253. Let A = {1, 2, 3, 4}, B = {4, 6, 7, 8} and C = {2, 4, 6, 8}. Verify the following identity :

$(A \cap B) \cap C = A \cap (B \cap C)$.

Watch Video Solution

254. Let A = {1, 2, 3, 4}, B = {4, 6, 7, 8} and C = {2, 4, 6, 8}. Verify the following identity :

$A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.

Watch Video Solution

255. Let A = {1, 2, 3, 4}, B = {4, 6, 7, 8} and C = {2, 4, 6, 8}. Verify the following identity :

$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

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256. If A = {1, 2, 3,4}, B= {2, 4,6, 8} and C= { 3, 4, 5,6}, verify that : $A \cap (B \cap C) = (A \cap B) \cap C$.

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257. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is C^c?

Watch Video Solution

258. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is A^c?

Watch Video Solution

259. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A \cup A^c$?

Watch Video Solution

260. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A \cap A^c$?

Watch Video Solution

261. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A \cap (B - C)$?

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262. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A - (B \cup C)$?

Watch Video Solution

263. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A - (B \cap C)$?

Watch Video Solution

264. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is A - (B - C) ?

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265. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A^c \cap (B \cup C)^c$?

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266. If U ={1,2, 3,4,5,6, 7, 8,9, 10}, A= {1, 3,5,7,9}, B = {2,4, 6, 8, 10} and C = {1 2, 3, 4}, then:

What is $A^c \cup (B^c \cap C^c)$?

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267. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

What is A $\cup$ U?

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268. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

What is A $\cap$ U?

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269. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

What is $A \cup \phi$?

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270. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

What is $A \cap \phi$?

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271. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

Verify that $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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272. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

Verify that $A - (B \cup C) = (A - B) \cap (A - C)$.

Watch Video Solution

273. If U= {a, e, i, o,u}, A= {a, e, i}, B= {e, o, u}, C = (a, i, u}, then:

Verify that $A-(B \cap C)=(A-B) \cup(A-C)$.

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274. Prove that : (i) $A \subset(A \cup B)$ (ii) $B \subset(A \cup B)$.

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275. Prove that : (i) $(A \cap B) \subset A$ (ii) $(A \cap B) \subset B$.

Watch Video Solution

276. Prove that $A^c - B^c = B - A$.

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277. Prove that : $B^c - A^c = A - B$.

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278. If $A^c \cup B = U$, show that $A \subset B$.

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279. Let U = {1, 2, 3, 4, 5, 6}, A = (2, 3} and B = (3, 4, 5}.

Find A', B', $A' \cap B'$, $A \cup B$ and hence show that

$(A \cup B)' = A' \cap B'$.

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280. If U = (1,2, 3,....., 10} , A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 7, 9}, C = {2, 4, 8, 10}, verify that :

$(A \cup B)^c = A^c \cap B^c$.

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281. If U = (1,2, 3,....., 10} , A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 7, 9}, C = {2, 4, 8, 10}, verify that : $(A \cap B)^c = A^c \cup B^c$.

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282. If U = (1,2, 3,....., 10} , A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 7, 9}, C = {2, 4, 8, 10}, verify that : $A - B = A \cap B^c$.

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283. If U = (1,2, 3,....., 10} , A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 7, 9}, C = {2, 4, 8, 10}, verify that : $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

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284. If A={1,2,4, 5}, B= {2, 3, 5, 6} and C = (4, 5, 6, 7}, then verify that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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285. If A = {1, 2, 3, 4, 5}, B = {2, 3,5, 7, 9} and C = {3, 4, 6, 8, 10}, then prove that : $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

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286. Prove that $A \subset B, B \subset C \Rightarrow A \subset C$.

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287. Prove the following : $A \subset B \Leftrightarrow A^c \supset B^c$.

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288. Prove the following : $A \subset B \Leftrightarrow A \cap B = A$.

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289. Prove the following : $A \subset B \Leftrightarrow A \cup B = B$.

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290. Prove that following :

$(x \notin A \Rightarrow x \notin B) \Leftrightarrow B \subset A$.

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291. Prove that following :

$(A \cup B = U) \Leftrightarrow B^c \subset A \Leftrightarrow A^c \subset B.$

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292. Prove that following :

$(A \cap B = \phi) \Leftrightarrow A \subset B^c \Rightarrow B \subset A^c$, where U is the universal set.

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293. Prove the following : $B - A = B \cap A^c$.

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294. Prove the following : $(A \cup B) - A = B - A$

.

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295. For sets A,B and C, prove that :

$A - (B - C) = (A - B) \cup (A \cap C)$.

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296. For sets A,B and C, prove that :

$A - (B \cup C) = (A - B) \cap (A - C)$.

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297. If A, B and C are any three sets, then prove that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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298. If A, B and C are any three sets, then prove that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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299. For sets A,B and C, prove that :

$(A - B) \cap C = (A \cap C) - B$.

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300. If A and B are subsets of the universal set U, then show that :

$B \subset A \cup B.$

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301. If A and B are subsets of the universal set U, then show that :

$(A \cap B) \subset A.$

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302. If A and B are subsets of the universal set U, then show that :

$(A \cap B) \subset B.$

Watch Video Solution

303. Using properties of sets, show that $A \cup (A \cap B) = A$

Watch Video Solution

304. Using properties of sets, show that $A \cap (A \cup B) = A$

Watch Video Solution

305. If A, B and C are any three sets, then prove that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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306. Prove that : $(A \cup B) - C = (A - C) \cup (B - C)$.

Watch Video Solution

307. If A, B and C are any three sets, then prove that : $A \cap (B - C) = (A \cap B) - (A \cap C)$.

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308. Prove that : $A \cap (B - A) = \phi$.

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309. Prove that : $(A - B) \cap (B - A) = \phi$.

Watch Video Solution

310. Prove that : $(A - B) \cap (A \cap B) = \phi$.

Watch Video Solution

311. Prove that : $\phi - A = \phi$.

Watch Video Solution

312. Let A and B be two sets. Prove that : $(A - B) \cup B = A$ if and only if $B \subset A$.

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313. Prove that if $A \cup B = C$ and $A \cap B = \phi$, then A= C-B.

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314. For any sets A and B, prove that : $P(A \cap B) = P(A) \cap P(B)$.

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315. Show that for any sets A and B, $A = (A \cap B) \cup (A - B)$ and $A \cup (B - A) = (A \cup B)$

Watch Video Solution

316. Using properties of sets, show that $A \cup (A \cap B) = A$

Watch Video Solution

317. Using properties of sets, show that $A \cap (A \cup B) = A$

Watch Video Solution

318. Show that $A \cap B = A \cap C$ need not imply B = C.

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319. Prove that if a set has only one clement then it has 2 subsets.

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320. Prove that If $B \subset A$ and if B has one element less than that of A, prove that A has twice as many subsets as B.

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321. Deduce from these two results that a set with 2 elements has 2^2 subsets, a set with 3 elements has 2^3 subsets, and so on. How many subsets does a set with n elements have ?

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322. Prove that $A^c - B^c = B - A$.

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323. Draw appropriate Venn diagram for the following : $(A \cup B)'$

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324. Draw appropriate Venn diagram for the following : $A' \cap B'$

Watch Video Solution

325. Draw appropriate Venn diagram for the following : $(A \cap B)'$

Watch Video Solution

326. Draw appropriate Venn diagram for the following : $A' \cup B'$

Watch Video Solution

327. Prove that : $(A \cup B \cup C)^c = A^c \cap B^c \cap C^c$.

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328. If A = {1, 2, 3}, B= { 4, 5, 6} and C= { 7, 8, 9}, verify that : $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.

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329. Prove that : $(A \cup B) = (A - B) \cup (B - A) \cup (A \cap B)$.

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330. For any two sets A and B, prove that : $A \Delta B = (A \cup B) - (A \cap B)$.

Watch Video Solution

331. For any two sets A and B, prove that : $(A - B) \cup (B - A) = (A \cup B) - (A \cap B)$.

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332. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $A \cup C$.

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333. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $B \cup C$.

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334. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $A \cup B$.

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335. Let A = {1, 2, 3}, B = {3, 4} and C = {4, 5, 6}, the $A \cup (B \cap C)$ is

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336. If A = {0, 1, 2, 3, 5,6}, B = {1,3, 5, 7, 9} and C = {0, 5, 10, 20,40}, find

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337. Let A = {1, 2, 3}, B = {3, 4} and C = {4, 5, 6}, the $A \cup (B \cap C)$ is

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338. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $(A \cup B) - C$.

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339. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $(A \cap C) - B$.

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340. Let A = {1, 2, 3, 4,5}, B = {2, 3, 5, 7} and C = {1, 2, 4, 6} be the subsets of the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Draw venn diagrams to represent the following : $(A \cup B) \cap C$.

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341. If X and Y are two sets such that $X \cup Y$ has 50 elements, X has 28 elements and Y has 32 elements, how many elements does $X \cap Y$ have ?

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342. If X and Y are two sets such that $X \cup Y$ has 18 elements, X has 8 elements andY has 15 elements , how many elements does $X \cap Y$ have?

Watch Video Solution

343. If A and B are two sets such that $A \cup B$ has 20 elements, A has 8 elements and B has 16 elements, how many elements does $A \cap B$ have ?

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344. If S and T are two sets such that S has 21 elements, T has 32 elements, and $S \cap T$ has 11 elements, how many elements does $S \cup T$ have?

Watch Video Solution

345. If X and Y are two sets such that X has 40 elements, $X \cup Y$ has 60 elements and $X \cap Y$ has 10 elements, how many elements does Y have?

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346. If A and B are two sets such that : $n(A) = 20, n(A \cup B) = 42$ and $n(A \cap B) = 4$. Find: n (B), n (A - B) and n (B - A).

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347. If A and B are two sets such that : $n(A) = 17, n(A \cup B) = 38$ and $n(A \cap B) = 2$. Find: n (B), n (A - B) and n (B - A).

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348. Let n(U)= 700, n(A)= 200, n(B) = 300 and n(A $\cap$ B)= 100, then n $\left(A^c \cap B^c\right)$ =

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349. A survey shows that 63% of the Indians like cheese, whereas 76% like apples. If x % of the Indians like both cheese and apples, then x can be

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350. In a group of 400 people, 250 can speak Hindi and 200 can speak English. How many people can speak both Hindi and English?

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351. In a school there are 20 teachers who teach Mathematics or Physics. Of these, 12 teach Mathematics and 4 teach Physics and Mathematics. How many teach Physics?

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352. In a committee, 50 people speak French, 20 speak Spanish and 10 speak both Spanish and French. How many speak at least one of these two languages?

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353. In a group of people, 50 speak both English and Hindi and 30 speak English but not Hindi. If all the people speak at least one of the two languages, how many speak English?

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354. In a group of people, 50 speak both English and Hindi and 30 speak English but not Hindi. If all the people speak at least one of the two languages, how many speak English?

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355. In a group of 70 people 45 speak Hindi language and 33 speak English language and 10 speak neither Hindi nor English how many can speak both English as well as Hindi language how can speak only English language?

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356. In a group of students, 100 students know Hindi, 50 know English and 25 know both. Each of

the students knows either Hindi or English. How many students are there in the group?

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357. Out of 80 students who secured first class marks in Matchematics or in Physics , 50 obtained first class marks in Mathematics and 10 in both Physics and Mathematics. How many students secured first class marks in Physics only ?

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358. In a group of 70 people, 37 like coffee, 52 like tea and each person likes at least one of the two drinks. How many people like both coffee and tea?

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359. In a survey of 600 students in a school, 150 students were found to be taking tea and 215 taking coffee, 150 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?

Watch Video Solution

360. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?

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361. In a group of 65 people, 40 like cricket, 10 like both cricket and tennis. How many like tennis only and not cricket? How many like tennis?

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362. In a class of 35 students, 24 like to play cricket and 16 like to play football. Also, each student likes to play at least one of the two games. How many students like to play both cricket and football ?

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363. In a class of 25 students, 12 have taken Mathematics. 8 have taken Mathematics but not Biology. Find the number of students who have taken both Mathematics and Biology and the

number of those who have taken Biology but not Mathematics. Each student has taken either Mathematics or Biology or both.

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364. A survey shows that 74% of the Indians like apples, whereas 68% like oranges. What percentage of the Indians like both apples and Oranges ?

Watch Video Solution

365. In a group of 400 people, 250 can speak Hindi and 200 can speak English. How many people can speak both Hindi and English?

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366. 75 students secured first division marks either in English or in Mathematics or in both. If 50 of them secured first division in Mathematics and 10 in both English and Mathematics, then how many got first division in English ?

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367. A college awarded 38 medals in Football, 15 in Basketball and 20 in. Cricket. If these medals went to a total of 58 men and only three men got medals in all the three sports, how many received medals in exactly two of the three sports?

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368. In a group of 50 people, 30 like to play cricket, 25 like to play football and 32 like to play hockey. Assume that each one likes to play at least one of the three games. If 15 people like to play both

cricket as well as football, 11 people like to play both football as well as hockey and 18 like to play both cricket as well as hockey, then how many like to play all the three games ?

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369. In a group of 50 people, 30 like to play cricket, 25 like to play football and 32 like to play hockey. Assume that each one likes to play at least one of the three games. If 15 people like to play both cricket as well as football, 11 people like to play both football as well as hockey and 18 like to play

both cricket as well as hockey, then how many like to play only football ?

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370. In a group of 50 people, 30 like to play cricket, 25 like to play football and 32 like to play hockey. Assume that each one likes to play at least one of the three games. If 15 people like to play both cricket as well as football, 11 people like to play both football as well as hockey and 18 like to play both cricket as well as hockey, then how many like to play only hockey ?

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371. In a class, 22 students offered Mathematics, 18 students offered Chemistry and 24 students offered Physics. All of them have to offer at least one of these. 11 are in both Mathematics and Chemistry, 13 in Chemistry and Physics and 14 in Mathematics and Physics and 7 have offered all the three subjects. Find : how many students are there in the class ?

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372. In a class, 22 students offered Mathematics, 18 students offered Chemistry and 24 students offered Physics. All of them have to offer at least one of these. 11 are in both Mathematics and Chemistry, 13 in Chemistry and Physics and 14 in Mathematics and Physics and 7 have offered all the three subjects. Find : how many students offered only Mathematics ?

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373. A class has 175 students. The following is the description showing the number of students

studying one or more of following subjects in this class. Mathematics 100 , Physics 70, Chemistry 46, Mathematics and Physics 30, Mathematics and Chemistry 28, Physics and Chemistry 23, Mathematics, Physics and Chemistry 18 : Find : the number of students who are enrolled in Mathematics alone, Physics alone and Chemistry alone .

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374. A class has 175 students. The following table shows the number of students studying one or

more of the following subjects in this case.

Subjects	Number of students
Mathematics	100
Physics	70
Chemistry	46
Mathematics and Physics	30
Mathematics and Chemistry	28
Physics and Chemistry	23
Mathematics, Physics and Chemistry	18

How many students are enrolled in Mathematics alone, Physics alone and Chemistry alone? Are there students who have not offered any one of these subjects?

375. In a survey of 100 students, how many of students studying the various languages were found to study : English only 18, English but not Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, no language 24. Find : How many students were studying Hindi ?

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376. In a survey of 100 students, how many of students studying the various languages were found to study : English only 18, English but not

Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, no language 24. Find : How many students were studying English and Hindi ?

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377. In a survey of 400 students in a school, 110 were listed as taking Apple Juice, 140 as taking Orange juice and 85 were listed as taking both Apple as well as Orange juice. Find how many students were taking neither Apple juice nor Orange juice.

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378. In a survey of 100 persons it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazines A and B, 10 read magazines A and C, 5 read magazines B and C and 3 read all three magazines. Find : How many read none of three magazines ?

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379. In a survey of 100 persons it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazines A and B, 10 read magazines A and C, 5 read magazines B and C and 3 read all three magazines. Find : How many read magazine C only ?

380. In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read

both H and T, 8 read both T and I, 3 read all three newspapers. Find: the number of people who read at least one of the newspapers.

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381. In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all three newspapers. Find: the number of people who read exactly one newspaper.

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