



1. If $\mu = \{6, 3, 1, 8, -1, -3, -9, -6, 9, -7, 2, 4, -2, 7, 0\}$, $A = \{6, 3, 1, 8, -1\}$ and $B = \{-3, -9, -6, 9, -7, 6, 2\}$, find $(A \cup B) - (A \cap B)$
(i) $\{4, 2, 8, -7, -1, 9, 1, -6, -9, 3\}$ (ii) $\{9, -3, 2, 8, -9, -6, 3, 1, -7\}$ (iii) $\{-3, 9, 3, 1, -6, 8, -7, -1, -9\}$
(iv) $\{9, -2, -7, 2, -3, 8, 1, -9, 3, -6, -1\}$ (v) $\{3, -6, 8, -3, 2, 1, 9, -9, -1, -7\}$
2. If $A = \{13, 11, 7, 9, 3, 4\}$, $B = \{12, 3, 5, 1, 11, 10\}$ and $C = \{8, 15, 1, 6, 2, 14\}$, then $B \cap (C \cap A) =$
(i) $\{\}$ (ii) $\{8\}$ (iii) $\{13\}$ (iv) $\{10\}$ (v) $\{18\}$
3. Which of the following is 'intersection' symbol?
(i) \cap (ii) \neq (iii) \in (iv) \supset (v) \subseteq
4. If $A = \{8, -1, -2, -6, 1, -8\}$ and $\mu = \{8, -1, -2, -6, 1, -8, 3, 9, 5, 2\}$, find $A \cap \mu$
(i) $\{-8, -6, 1, -2, 8\}$ (ii) $\{-1, 13, -2, -8, 1, -6\}$ (iii) $\{-1, 8, -2, 1, -8, -6\}$ (iv) $\{4, 8, -2, -8, -6, -1, 1, 0\}$ (v) $\{-4, -2, -5, -8, 8, -1\}$
5. If $A = \{-6, 8, -7, -4, 4, 0\}$ and $\mu = \{-6, 8, -7, -4, 4, 0, 2, -8, -5, 6\}$, find $A \cup \emptyset$
(i) $\{0, 8, -6, 4, -4\}$ (ii) $\{-7, 2, -6, 5, -4, 0, 4, 8\}$ (iii) $\{-4, -7, 0, 4, -5, 8\}$ (iv) $\{-6, -7, 0, 4, -4, 8\}$ (v) $\{-4, -1, 0, -8, 10, 4\}$
6. Which of the following are true with respect to set operations?
a) Intersection is associative
b) Intersection distributes over union
c) Union distributes over intersection
d) Union does not distribute over intersection
e) Intersection is not associative
(i) $\{d, e, c\}$ (ii) $\{d, a, b\}$ (iii) $\{e, b\}$ (iv) $\{d, a\}$ (v) $\{a, b, c\}$
7. If $\mu = \{-8, 7, 1, -6, 3, -1, -4, -9, 4, 8\}$, $A = \{-8, 7, 1, -6\}$ and $B = \{3, -6, -1\}$, find $n((A \cup B)')$
(i) 7 (ii) 3 (iii) 2 (iv) 5 (v) 4
8. If $\mu = \{7, -2, 3, -3, -9, -4, 9, 8, 5, -8, 6, 2, -6, -1, 0, -7, -5\}$, $A = \{7, -2, 3, -3, -9, -4\}$ and $B = \{3, 9, -2, 8, -4, 5, -8\}$, find $(A - B) \cup (B - A)$
(i) $\{-3, -8, 9, 8, -9, 5\}$ (ii) $\{5, -7, -9, -8, 9, 8, 7\}$ (iii) $\{7, -3, 9, 5, -6, -9, 8, -8\}$ (iv) $\{-9, 8, 7, -8, -3, 5\}$ (v) $\{9, -9, 8, -8, 7, -3, 5\}$
9. If $\mu = \{-1, -2, -3, 2, 1, 7, -5, 4, -9, -7, -6, 0\}$, $A = \{-1, -2, -3\}$ and $B = \{2, -3, 1, 7, -5, -1, 4\}$, find $n(A')$
(i) 7 (ii) 11 (iii) 9 (iv) 8 (v) 10
10. Which of the following are true with respect to set operations?
a) Intersection is commutative
b) Union is commutative
c) Union is not commutative
d) Intersection is not commutative
e) Union is associative
(i) $\{c, a, b\}$ (ii) $\{c, d, e\}$ (iii) $\{c, a\}$ (iv) $\{d, b\}$ (v) $\{a, b, e\}$

11. Which of the following is an infinite set?

- (i) $\{\}$ (ii) $\{0,1,2,3,4,\dots\}$ (iii) $\{-7,-2\}$ (iv) $\{9\}$ (v) $\{-4,3,-1\}$

12. If $A = \{7,2,0,3,5\}$ and $B = \{6,2,3,9,8\}$, then $B \cap A =$

- (i) $\{2,3,7\}$ (ii) $\{3,6,2\}$ (iii) $\{3,2,14\}$ (iv) $\{3,9,2,0\}$ (v) $\{2,3\}$

13. Which of the following is a subset of $A = \{6,4,7,9\}$?

- (i) $\{5,0\}$ (ii) $\{0,7,4,6\}$ (iii) $\{5\}$ (iv) $\{5,1,0\}$ (v) $\{\}$

14. If $\mu = \{2,4,15,-6,8,5,-5,10,13,17,-9,11,3,-4,-3,-2,0,18,6,12,-1,16,-7,9\}$, $A = \{2,4,15,-6,8,5,-5,10\}$, $B = \{10,13,5,17,-6,4,-9,15,11,3\}$, $C = \{-4,-3,-2,0,13,4,2,10,15\}$, find $C \cup A$

- (i) $\{-3,10,15,-4,13,0,5,-5,-6,2,-2,4,8,18\}$ (ii) $\{-3,10,15,13,0,5,-5,-6,2,-2,4,8,18\}$
(iii) $\{-3,10,15,13,0,5,-5,-6,2,-2,4,8\}$ (iv) $\{10,15,-4,13,0,5,-5,-6,2,-2,4,8\}$
(v) $\{-3,10,15,-4,13,0,5,-5,-6,2,-2,4,8\}$

15. If $A = \{6,14,4\}$, $B = \{3,12,9\}$ and $C = \{14,6,3\}$, then $A \cup (B \cap C) =$

- (i) $\{14,6,17,9,12,3,4\}$ (ii) $\{4,12,3,14,6\}$ (iii) $\{6,12,14,3,4,9\}$ (iv) $\{\}$ (v) $\{14,12,3,9,6\}$

16. If $\mu = \{-7,17,-8,-2,3,18,10,1,8,-1,2,-3,16,5,-5,15,7,-4,9,-9,6,-6,4,14,11,0\}$, $A = \{-7,17,-8,-2,3,18,10\}$, $B = \{-2,1,8,-1,2,-3,-7,16,5,-5\}$, $C = \{15,7,-8,-5,-4,9,18,5,-9,6\}$, find $(C \cup A) \cap (C \cup B)$

- (i) $\{-8,7,-7,-9,15,-2,9,5,18,6,-4\}$ (ii) $\{-8,7,-5,-7,-9,15,-2,9,5,18,6,-4,-6\}$ (iii) $\{-8,7,-5,-7,-9,15,-2,9,5,18,6,-4\}$
(iv) $\{-8,7,-7,-9,15,-2,9,5,18,6,-4,-6\}$ (v) $\{-8,7,-5,-9,15,-2,9,5,18,6,-4\}$

17. If $\mu = \{14,-4,-1,-7,8,12,-9,1,-3,5,-6,10,7,13,2,0,9,-5,11,-8,3,4\}$, $A = \{14,-4,-1,-7,8,12\}$, $B = \{-9,1,-3,5,-7,-6,10,-1,7,12\}$, $C = \{13,2,0,9,10,-4,-6\}$, find $B - (C \cup A)$

- (i) $\{1,-3,7,-9,5,12\}$ (ii) $\{1,-3,7,-9,5\}$ (iii) $\{1,-3,7,-9,12\}$ (iv) $\{1,-3,7,-9\}$ (v) $\{1,-3,-9,5\}$

18. Which of the following is 'equivalent set' symbol?

- (i) \cup (ii) \supset (iii) \neq (iv) \leftrightarrow (v) \in

19. If $\mu = \{6,5,-6,2,0,-8,7,-7,-5,-3\}$, $A = \{6,5,-6\}$ and $B = \{2,0,-8,7,6\}$, find $n((A - B)')$

- (i) 6 (ii) 8 (iii) 11 (iv) 7 (v) 9

20. Which of the following is a null set?

- (i) $\{-5,1\}$ (ii) $\{-2,4,-5,-1,5\}$ (iii) $\{0,-3,6,3\}$ (iv) $\{2,-2,4\}$ (v) $\{\}$

21. If $A = \{0,4,6,3\}$ and $B = \{7,9,8,3\}$, then $A - B =$

- (i) $\{0,6,4\}$ (ii) $\{7,8,9\}$ (iii) $\{6,0\}$ (iv) $\{4,0,3,6\}$ (v) $\{0,6,15,4\}$

22. Which of the following are true?

- a) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
b) $(A \cup B) \cup C = A \cup (B \cup C)$
c) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
d) $A \cap (B \cup C) = (A \cup B) \cap (A \cup C)$
e) $A \cup (B \cap C) = (A \cap B) \cup (A \cap C)$
f) $(A \cap B) \cap C = A \cap (B \cap C)$

- (i) $\{d,a\}$ (ii) $\{d,e,c\}$ (iii) $\{a,b,c,f\}$ (iv) $\{d,f,a\}$ (v) $\{e,b\}$

23. If $\mu = \{-7, -8, 10, -4, 14, -5, -9, 11, 13, 12, -3, 6, 1, 5, 9, 4, 3, -6, -1, 8, 7\}$, $A = \{-7, -8, 10, -4, 14, -5\}$, $B = \{-9, 14, 11, -4, 13, 12, -3, 6\}$, $C = \{12, 1, 11, 5, 9, 4, -7, 3, 10\}$, find $A - (A \cap (B \cap C))$
- (i) $\{-7, 14, -5, 10, -8, -4, -9\}$ (ii) $\{-7, 14, -5, 10, -4, -9\}$ (iii) $\{-7, 14, -5, 10, -4\}$ (iv) $\{-7, 14, -5, 10, -8, -4\}$
- (v) $\{-7, -5, 10, -8, -4\}$
24. If $\mu = \{9, -2, -4, 6, -3, 11, 5, 14, 15, 1, 7, -9, 12, -1, 8, 4, 16, 2, 10, 0, -8\}$, $A = \{9, -2, -4, 6, -3, 11, 5, 14, 15, 1\}$, $B = \{7, -9, 1, -3, 5, -2, 9, -4\}$, $C = \{-4, 11, 12, -1, 8, 4, 6\}$, find $(A \cup B)'$
- (i) $\{8, 2, 4, 16, 12, -8, -1, 0, 10, 1\}$ (ii) $\{8, 2, 4, 16, 12, -8, -1, 0, 10\}$ (iii) $\{8, 2, 4, 16, -8, -1, 0, 10\}$
- (iv) $\{8, 2, 16, 12, -8, -1, 0, 10\}$ (v) $\{8, 2, 4, 16, -8, -1, 0, 10, 1\}$
25. Which of the following elements does not belong to the set $\{o, a, b, t, u\}$
- (i) t (ii) o (iii) u (iv) l (v) a

Assignment Key

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|----------|---------|-----------|-----------|----------|----------|
| 1) (v) | 2) (i) | 3) (i) | 4) (iii) | 5) (iv) | 6) (v) |
| 7) (v) | 8) (v) | 9) (iii) | 10) (v) | 11) (ii) | 12) (v) |
| 13) (v) | 14) (v) | 15) (iii) | 16) (iii) | 17) (ii) | 18) (iv) |
| 19) (ii) | 20) (v) | 21) (i) | 22) (iii) | 23) (iv) | 24) (ii) |
| 25) (iv) | | | | | |