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List of 19 Sets Formulas

Sets

1) Number of Elements in Complement of Set A

$$fx \quad n(A^c) = n(U) - n(A)$$

[Open Calculator !\[\]\(a870788d6ed9b8fd294b7654a8c8526b_img.jpg\)](#)

$$ex \quad 40 = 50 - 10$$

2) Number of Elements in Difference of Two Sets A and B

$$fx \quad n(A-B) = n(A) - n(A \cap B)$$

[Open Calculator !\[\]\(c50c8b7b2cc2cf9ff925edec0ee94c0d_img.jpg\)](#)

$$ex \quad 4 = 10 - 6$$

3) Number of Elements in Exactly One of Sets A, B and C

 fx
[Open Calculator !\[\]\(f60b7a900783ac3fd531bfd9c111be6d_img.jpg\)](#)

$$n(\text{Exactly One of } A, B, C) = n(A) + n(B) + n(C) - 2 \cdot n(A \cap B) - 2 \cdot n(B \cap C) - 2 \cdot n(A \cap C) + 3 \cdot n(A \cap B \cap C)$$

$$ex \quad 12 = 10 + 15 + 20 - 2 \cdot 6 - 2 \cdot 7 - 2 \cdot 8 + 3 \cdot 3$$

4) Number of Elements in Exactly Two of Sets A, B and C

$$fx \quad n(\text{Exactly Two of } A, B, C) = n(A \cap B) + n(B \cap C) + n(A \cap C) - 3 \cdot n(A \cap B \cap C)$$

[Open Calculator !\[\]\(166772600a13ad0a433053f90fe45649_img.jpg\)](#)

$$ex \quad 12 = 6 + 7 + 8 - 3 \cdot 3$$

5) Number of Elements in Intersection of Two Sets A and B

$$fx \quad n(A \cap B) = n(A) + n(B) - n(A \cup B)$$

[Open Calculator !\[\]\(a8ff699ced33317c53c86f9bf3171905_img.jpg\)](#)

$$ex \quad 6 = 10 + 15 - 19$$

6) Number of Elements in Power Set of Set A

$$fx \quad n_P(A) = 2^{n(A)}$$

[Open Calculator !\[\]\(26cddea01ddf7f002af4ba779c4999ee_img.jpg\)](#)

$$ex \quad 1024 = 2^{10}$$


7) Number of Elements in Set A

$$fx \quad n(A) = n(A \cup B) + n(A \cap B) - n(B)$$

[Open Calculator !\[\]\(4a60014e8c124e85ae27c7d200855f3f_img.jpg\)](#)

$$ex \quad 10 = 19 + 6 - 15$$




8) Number of Elements in Set B 

$$fx \quad n(B) = n(A \cup B) + n(A \cap B) - n(A)$$

Open Calculator 


$$ex \quad 15 = 19 + 6 - 10$$

9) Number of Elements in Symmetric Difference of Two Sets A and B 

$$fx \quad n(A \Delta B) = n(A \cup B) - n(A \cap B)$$

Open Calculator 


$$ex \quad 13 = 19 - 6$$

10) Number of Elements in Symmetric Difference of Two Sets A and B given $n(A)$ and $n(B)$ 

$$fx \quad n(A \Delta B) = n(A) + n(B) - 2 \cdot n(A \cap B)$$

Open Calculator 


$$ex \quad 13 = 10 + 15 - 2 \cdot 6$$

11) Number of Elements in Symmetric Difference of Two Sets A and B given $n(A-B)$ and $n(B-A)$ 

$$fx \quad n(A \Delta B) = n(A-B) + n(B-A)$$

Open Calculator 

$$ex \quad 13 = 4 + 9$$

12) Number of Elements in Union of Three Sets A, B and C 

$$fx \quad n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(B \cap C) - n(A \cap C) + n(A \cap B \cap C)$$

Open Calculator 

$$ex \quad 27 = 10 + 15 + 20 - 6 - 7 - 8 + 3$$

13) Number of Elements in Union of Two Disjoint Sets A and B 

$$fx \quad n(A \cup B) = n(A) + n(B)$$

Open Calculator 


$$ex \quad 25 = 10 + 15$$

14) Number of Elements in Union of Two Sets A and B 

$$fx \quad n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

Open Calculator 

$$ex \quad 19 = 10 + 15 - 6$$


Subsets 15) Number of Non Empty Proper Subsets of Set A 

$$fx \quad N_{\text{Non Empty Proper}} = 2^{n(A)} - 2$$

Open Calculator 

$$ex \quad 1022 = 2^{10} - 2$$




16) Number of Non Empty Subsets of Set A 

$$fx \quad N_{\text{Non Empty}} = 2^{n(A)} - 1$$

[Open Calculator !\[\]\(e78f798d4ea5c530c9db49e7d26e6b95_img.jpg\)](#)


$$ex \quad 1023 = 2^{10} - 1$$

17) Number of Odd Subsets of Set A 

$$fx \quad N_{\text{Odd}} = 2^{n(A)-1}$$

[Open Calculator !\[\]\(05be7c7a8995decd503647c99211f7c2_img.jpg\)](#)

$$ex \quad 512 = 2^{10-1}$$

18) Number of Proper Subsets of Set A 

$$fx \quad N_{\text{Proper}} = 2^{n(A)} - 1$$

[Open Calculator !\[\]\(fe3aebe81acea8d45108cd2768939da7_img.jpg\)](#)

$$ex \quad 1023 = 2^{10} - 1$$

19) Number of Subsets of Set A 

$$fx \quad N_S = 2^{n(A)}$$

[Open Calculator !\[\]\(899d8b7697d64725bf017d3296cfcf1b_img.jpg\)](#)

$$ex \quad 1024 = 2^{10}$$



Variables Used

- $n(A)$ Number of Elements in Set A
- $n(A^c)$ Number of Elements in Complement of Set A
- $n(A \cap B)$ Number of Elements in Intersection of A and B
- $n(A \cap B \cap C)$ Number of Elements in Intersection of A, B and C
- $n(A \cap C)$ Number of Elements in Intersection of A and C
- $n(A \cup B)$ Number of Elements in Union of A and B
- $n(A \cup B \cup C)$ Number of Elements in Union of A, B and C
- $n(A - B)$ Number of Elements in A-B
- $n(A \Delta B)$ No. of Elements in Symmetric Difference of A and B
- $n(B)$ Number of Elements in Set B
- $n(B \cap C)$ Number of Elements in Intersection of B and C
- $n(B - A)$ Number of Elements in B-A
- $n(C)$ Number of Elements in Set C
- $n(\text{Exactly One of A, B, C})$ No. of Elements in Exactly One of the A, B and C
- $n(\text{Exactly Two of A, B, C})$ No. of Elements in Exactly Two of the A, B and C
- $n(U)$ Number of Elements in Universal Set
- $N_{\text{Non Empty Proper}}$ Number of Non Empty Proper Subsets
- $N_{\text{Non Empty}}$ Number of Non Empty Subsets of Set A
- N_{Odd} Number of Odd Subsets of Set A
- $n_{P(A)}$ Number of Elements in Power Set of A
- N_{Proper} Number of Proper Subsets of Set A
- N_S Number of Subsets



Constants, Functions, Measurements used



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