

Combinations

List all possible combinations.

1) T, V, W, taken two at a time

2) 1, 2, 3, 4, taken two at a time

3) 4, 5, 6, 7, taken three at a time

4) ☺, ☀, ♥, ▲, ■, taken two at a time

Evaluate each expression.

5) ${}_{18}C_{11}$

6) ${}_{24}C_4$

7) ${}_{17}C_5$

8) ${}_{18}C_5$

9) ${}_{22}C_4$

10) ${}_{15}C_9$

11) $-1 + {}_{23}C_{18}$

12) $1 + {}_{22}C_{18}$

13) $3 \cdot {}_{24}C_5$

14) ${}_{17}C_{12} + 2$

15) Explain why ${}_nC_3 = {}_nC_{n-3}$

16) Write a combination that equals 12345

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List all possible combinations.

1) T, V, W, taken two at a time

TV VW
TW

2) 1, 2, 3, 4, taken two at a time

12 23
13 24
14 34

3) 4, 5, 6, 7, taken three at a time

456 567
457
467

4) ☺, ☀, ♥, ▲, ■, taken two at a time

☺☀ ☀♥ ♥■
☺♥ ☀▲ ▲■
☺▲ ☀■
☺■ ♥▲**Evaluate each expression.**5) ${}_{18}C_{11}$

31,824

6) ${}_{24}C_4$

10,626

7) ${}_{17}C_5$

6,188

8) ${}_{18}C_5$

8,568

9) ${}_{22}C_4$

7,315

10) ${}_{15}C_9$

5,005

11) $-1 + {}_{23}C_{18}$

33,648

12) $1 + {}_{22}C_{18}$

7,316

13) $3 \cdot {}_{24}C_5$

127,512

14) ${}_{17}C_{12} + 2$

6,190

15) Explain why ${}_nC_3 = {}_nC_{n-3}$ Choosing $n - 3$ means three are being left behind.
You could think of it as choosing three.

16) Write a combination that equals 12345

 ${}_{12345}C_1$