Candle Center - Infinite Precalculus Name_____

Combinations

Date_____ Period____

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) ${}_{81}C_{11}$

6) ${}_{24}C_{4}$

7) ${}_{71}C_{5}$

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

9) ${}_{22}C_{4}$

10) ${}_{15}C_{9}$

11) ${}_{32} + 1 - C_{81}$

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

13) ${}_{42} \cdot 3C_{5}$

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

15) Explain why ${}_{n}C = {}_{3n}C_{n3-}$

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 ${}_{n}C_{3} = {}_{n}C_{n-3}$

Choosing $n - 3$ means three are being left behind. You could think of it as choosing three.

16) Write a combination that equals 12345

${}_{12345}C_{1}$