

12-8

Combinations

Combinations-where order is NOT important

$$\text{formula: } {}_nC_r = \frac{n!}{r!(n-r)!}$$

Ex5a) 9 members need to form 3 committees with 3 people on each committee.

$${}_9C_3 = \frac{9!}{3!(9-3)!} = 84 \text{ combinations}$$

If three people were selected as president, v.p., and secretary, how many would there be?

$${}_9P_3 = 9!/(9-3)! = 504$$

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Ex5b) 20 kids on the team and 5 awards are given out at the banquet, how many different ways could it be done.(mvp, mtd's, rushing,etc.)

$${}_{20}C_5 = \frac{20!}{5!(20-5)!} = 15,504$$

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Try: How many different poker hands can you have (your given 5 cards and there is 52 cards in a deck)?

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1 Simplify each expression.

a. ${}_4C_2$

b. ${}_7C_3$

c. ${}_{10}C_4$

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May 16-2:04 PM