

Combinations

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Name: _____

Period: _____

Solve these problems.

- 1) How many ways can three students be chosen from a class of 30 students? 2) How many ways can the top two runners out of forty contestants be chosen?

- 3) Use the formula to calculate $C(12, 3)$.

$$C(n, r) = \frac{n!}{r!(n-r)!}$$

- 4) Use the formula to calculate $C(15, 9)$.

$$C(n, r) = \frac{n!}{r!(n-r)!}$$

- 5) Twenty-four students go on a field trip. Two students need to be chosen to take on leadership roles. How many ways are there to choose two of these students?

- 6) If eight horses compete in a race, how many ways can three horses finish first?

- 7) Mr. Karadimos has 150 students. He can only take 25 students on a field trip. How many ways can he choose 25 students for the trip?

- 8) If Mr. Karadimos chooses that he must take his top ten students on the trip (see problem #7), now how many ways can he choose students for the trip?

- 9) How many ways can 5 cards be picked from a deck of cards?

- 10) A student has to answer fourteen out of twenty questions correctly on a test to get a decent grade. How many ways can this be done?