Counting Puzzles

Advanced — ANSWER KEY

Codes, teams, and tournaments.

Think: Order matters → multiply the shrinking choices. Order doesn't matter → divide out the repeats.

1. Answers with the thinking.

1) A team of 2 is chosen from 6 students (the order does not matter). How many different teams are possible? **15**

↳ *6 × 5 ÷ 2*

2) 6 players are in a checkers club. Every player plays every other player exactly once. How many games is that? **15**

↳ *6 × 5 ÷ 2*

3) A team of 2 is chosen from 9 chess players (the order does not matter). How many different teams are possible? **36**

↳ *9 × 8 ÷ 2*

4) A team of 2 is chosen from 5 singers (the order does not matter). How many different teams are possible? **10**

↳ *5 × 4 ÷ 2*

5) A lock code has 2 different digits chosen from 9 digit cards (order matters, no repeats). How many codes are possible? **72**

↳ *9 choices, then 8*

6) A team of 2 is chosen from 11 singers (the order does not matter). How many different teams are possible? **55**

↳ *11 × 10 ÷ 2*

7) 7 players are in a tennis group. Every player plays every other player exactly once. How many games is that? **21**

↳ *7 × 6 ÷ 2*

8) 12 players are in a chess club. Every player plays every other player exactly once. How many games is that? **66**

↳ *12 × 11 ÷ 2*

9) In how many different orders can 4 cars park in a row of 4 spaces? **24**

↳ *4 × 3 × 2 × 1*

10) A team of 2 is chosen from 8 chess players (the order does not matter). How many different teams are possible? **28**

↳ *8 × 7 ÷ 2*