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) 11 players are in a tennis group. Every player plays every other player exactly once. How many games is that? **55**

↳ *11 × 10 ÷ 2*

2) A lock code has 2 different digits chosen from 6 digit cards (order matters, no repeats). How many codes are possible? **30**

↳ *6 choices, then 5*

3) 7 players are in a ping-pong club. Every player plays every other player exactly once. How many games is that? **21**

↳ *7 × 6 ÷ 2*

4) A team of 2 is chosen from 10 chess players (the order does not matter). How many different teams are possible? **45**

↳ *10 × 9 ÷ 2*

5) A team of 2 is chosen from 10 scouts (the order does not matter). How many different teams are possible? **45**

↳ *10 × 9 ÷ 2*

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

↳ *6 × 5 ÷ 2*

7) A team of 2 is chosen from 12 students (the order does not matter). How many different teams are possible? **66**

↳ *12 × 11 ÷ 2*

8) A lock code has 2 different digits chosen from 8 digit cards (order matters, no repeats). How many codes are possible? **56**

↳ *8 choices, then 7*

9) A team of 2 is chosen from 7 students (the order does not matter). How many different teams are possible? **21**

↳ *7 × 6 ÷ 2*

10) A lock code has 2 different digits chosen from 5 digit cards (order matters, no repeats). How many codes are possible? **20**

↳ *5 choices, then 4*