



Apply the fundamental counting principle

1

You are putting together a pizza. There are 3 crusts, 2 sauces, 3 meats, 4 vegetables, and 3 cheeses to choose from. Which multiplication gives the number of different pizzas you can make?



- A $4 \times 2 \times 3 \times 4 \times 3$ B $2 \times 2 \times 3 \times 4 \times 3$ C $3 \times 2 \times 3 \times 4 \times 3$ D $3 + 2 + 3 + 4 + 3$

2

You are putting together an avatar. There are 2 hairstyles and 3 eye colors to choose from.

A $2 + 3$	B 1×3
C 3×3	D 2×3

3

You are putting together a custom car. You choose one color (red, black) and one wheel set (sport, classic, off-road).

A 2×3	B 3×3
C 1×3	D $2 + 3$

5

You are putting together a home office setup. You choose one desk (standing, wooden, glass) and one chair (mesh, leather). The chair cannot be leather.

- A Multiply the choices for every option and ignore the restriction.
B Add together the number of choices for every option.
C Subtract 1 from that option's choices, then multiply the choices across all options.
D Subtract the number of options from the total number of choices.

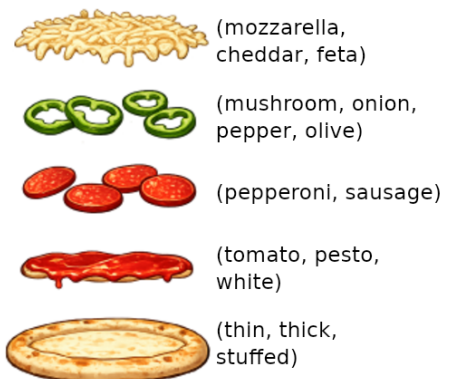
6

You are putting together a gift basket. You choose one theme (spa, food) and one wrapping (red, gold, silver). The theme must be food.

A $1 + 3$	B 2×3
C 1×2	D 1×3

4

You are putting together a pizza. You choose one crust (thin, thick, stuffed), one sauce (tomato, pesto, white), one meat (pepperoni, sausage), one vegetable (mushroom, onion, pepper, olive), and one cheese (mozzarella, cheddar, feta). How many different pizzas can you make?



A 216	B 15	C 215	D 217
----------	---------	----------	----------

7

You are putting together a meal. You choose one main (burger, pasta) and one dessert (ice cream, cheesecake, sundae). The main must be pasta.

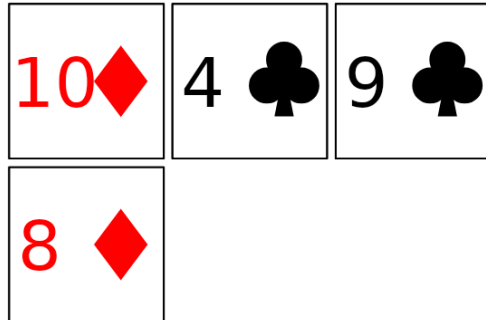
A 4	B 6
C 5	D 3



Apply the fundamental counting principle

8

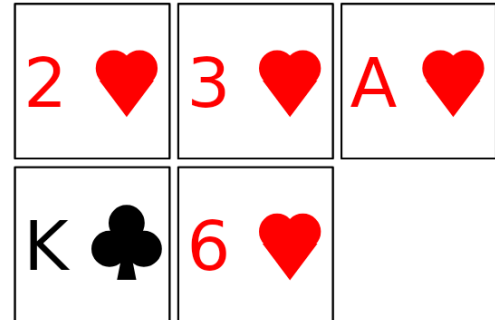
How many distinct ways can these cards be ordered? Show as a multiplication.



- | | | | |
|---|---------------------------------------|---|---|
| A | $\frac{4 \cdot 3 \cdot 2}{1 \cdot 2}$ | B | $\frac{4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 1}$ |
| C | $4 \cdot 3 \cdot 2$ | D | $\frac{4 \cdot 3 \cdot 2}{1 \cdot 3 \cdot 2}$ |
| E | $5 \cdot 4 \cdot 3 \cdot 2$ | F | $\frac{4 \cdot 3 \cdot 2}{3 \cdot 2}$ |

9

How many distinct ways can these cards be ordered? Show as a multiplication.



- | | | | |
|---|---|---|---|
| A | $\frac{5 \cdot 4 \cdot 3 \cdot 2}{3 \cdot 2}$ | B | $\frac{5 \cdot 4 \cdot 3 \cdot 2}{5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$ |
| C | $5 \cdot 4 \cdot 3 \cdot 2$ | D | $3 \cdot 2$ |
| E | $\frac{5 \cdot 4 \cdot 3 \cdot 2}{1 \cdot 2}$ | F | $\frac{5 \cdot 4 \cdot 3 \cdot 2}{1 \cdot 3 \cdot 2}$ |

10

You are putting together a home office setup. You choose one desk (standing, wooden) and one chair (mesh, leather, gaming). 1 of the possible office setups is unavailable.

- A Subtract the number of options from the total number of choices.
- B Multiply to count every outcome, then subtract the outcomes that are unavailable.
- C Add together the number of choices for every option.
- D Multiply the choices for every option and ignore the restriction.

11

A fair coin is flipped and a fair six-sided die is rolled.

- | | | | |
|---|----|---|----|
| A | 12 | B | 8 |
| C | 4 | D | 10 |

12

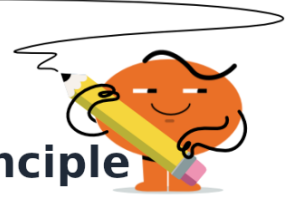
A spinner with three equal-sized sections coloured red, green, and blue is spun twice. A favourable outcome is one where there is exactly one red.

- | | | | |
|---|---|---|---|
| A | 4 | B | 5 |
| C | 3 | D | 9 |

13

You are putting together a meal. You choose one main (burger, pasta) and one dessert (ice cream, cheesecake, sundae).

- | | | | |
|---|---|---|---|
| A | 5 | B | 6 |
| C | 8 | D | 7 |

**Apply the fundamental counting principle****14**

You are putting together an outfit. There are 2 shoe styles, 2 pants styles, 4 shirts, and 3 hats to choose from. How many different outfits can you make?



A 49

B 11

C 47

D 48

15

You are putting together an outfit. There are 2 shirts, 3 pants, and 4 hats to choose from.

A

9

B

25

C

24

D

23

16

You are putting together a home office setup. You choose one desk (standing, wooden, glass) and one chair (mesh, leather). The glass desk and the mesh chair cannot be chosen together.

A $(3 \times 2) - (1 \times 1)$ B $(3 \times 2) + (1 \times 1)$ C 3×2 D 4×2