

Organize cases systematically

1

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



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

2

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
$2 + 3$ |

3

You are putting together an ice cream cone. You choose one cone (waffle, sugar, cup), one ice cream (chocolate, vanilla), one sprinkle style (rainbow, chocolate), and one topping (cherry, fudge). Which multiplication gives the number of different ice cream cones you can make?



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

4

From 6 available ingredients, 5 are chosen for a custom sandwich. How many choices are possible?

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- A Order matters
- B Order does not matter

5

From 6 applicants, 2 scholarship recipients are selected. How many selections are possible?

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- A Combination
- B Permutation

6

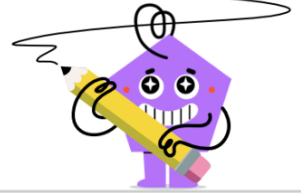
You are putting together a home office setup. You choose one desk (standing, wooden) and one chair (mesh, leather, gaming). 1 of the possible office setups is unavailable.

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

7

You are putting together an avatar. You choose one hairstyle (short, long, curly) and one eye color (brown, light blue). If the hairstyle is curly, then the eye color must be brown.

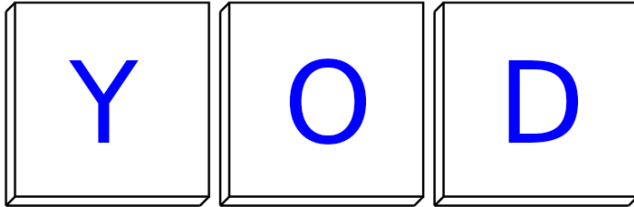
- A 6
- B 5
- C 4
- D 7



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8

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



A

$$3 \cdot 2$$

B

$$\frac{3 \cdot 2}{3 \cdot 2 \cdot 1}$$

C

$$\frac{3 \cdot 2}{3 \cdot 2}$$

D

$$\frac{3 \cdot 2}{2}$$

E

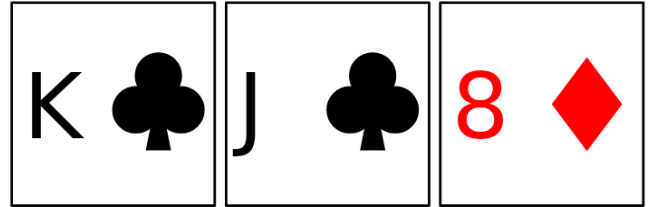
$$\frac{3 \cdot 2}{1 \cdot 2}$$

F

$$\frac{3 \cdot 2}{1 \cdot 3 \cdot 2}$$

9

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



A

$$\frac{3 \cdot 2}{3 \cdot 2 \cdot 1}$$

B

$$3 \cdot 2$$

10

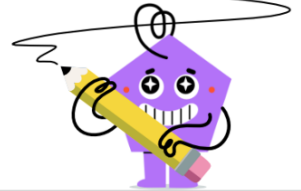
A fair coin is flipped and a fair six-sided die is rolled.

A

(H, 1) (H, 2) (H, 3) (H, 4) (H, 5)
(H, 6) (T, 1) (T, 2) (T, 3) (T, 4)
(T, 5) (T, 6)

B

(H, 1) (H, 2) (H, 3) (H, 4) (H, 5)
(H, 6)



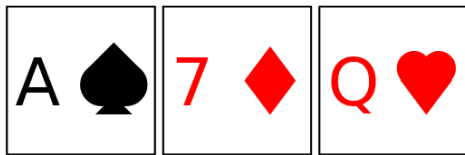
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- 11** A fair six-sided die is rolled and a spinner with red, green, and blue sections is spun. A favourable outcome is one where the spinner shows green.

A (1, G) (2, G) (3, G) (4, G) (5, G)
(6, G)

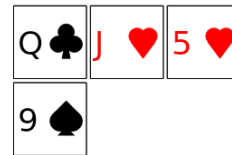
B (1, R) (1, G) (1, B)

- 12** How many distinct ways can these cards be ordered?



A 9 B 0 C 21
D 1 E 6 F 10

- 13** How many distinct ways can these cards be ordered?



A 2 B 24 C 15
D 11 E 1

- 14** You are putting together a pizza. There are 2 crusts, 3 sauces, 3 meats, 4 vegetables, and 2 cheeses to choose from. How many different pizzas can you make?



A 143 B 14 C 145 D 144