



Probability and Statistics - Permutations and Combinations Calculating - Intro

- 1 Select the correct formula for this notation
 ${}_5\text{P}_4$

A $\frac{5!}{4! \cdot 1!}$	B $\frac{5!}{3!}$
C $\frac{5!}{1!}$	

- 2 Select the correct value for when this notation is calculated
 ${}_6\text{P}_4$

A $\frac{720}{2}$	B $\frac{720}{48}$
C $\frac{24}{1}$	

- 3 Select the correct description for this notation
 ${}_5\text{P}_3$

- A From a group of 5 items select a set of 3 items regardless of order.
- B With a group of 3 items, if you choose 5 in a specific order, how many permutations are possible?
- C Choose 3 options in a specific order from a group of 5 options

- 4 Select the correct notation for this formula
 $\frac{5!}{1!}$

A ${}_5\text{P}_4$	B ${}_5\text{B}_4$
C ${}_5\text{C}_4$	

- 5 Select the correct description for this formula
 $\frac{6!}{4!}$

- A With a group of 6 options how many ways are there to choose a set of 2 options regardless of order?
- B Choose 2 options in a specific order from a group of 6 options
- C From a group of 4 items select a set of 4 items regardless of order.

- 6 Select the correct value for when this formula is calculated
 $\frac{6!}{4!}$

A $\frac{720}{24}$	B $\frac{120}{2}$
C $\frac{720}{48}$	

- 7 Select the correct formula for this description
Choose 2 options in a specific order from a group of 5 options

A $\frac{5!}{3! \cdot 1! \cdot 3!}$	B $\frac{4!}{2!}$
C $\frac{5!}{3!}$	

- 8 Select the correct notation for this description
With a group of 5 items, if you choose 2 in a specific order, how many permutations are possible?

A ${}_5\text{B}_2$	B ${}_5\text{C}_2$
C ${}_5\text{P}_2$	



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- 9** Select the correct value for when the described situation is calculated

From a group of 5 options how many ways are there to choose 2 options in a specific order?

A $\frac{120}{12}$

B $\frac{2}{1}$

C $\frac{120}{6}$

- 10** Select the correct formula for this notation

$${}_6\text{C}_4$$

A $\frac{6!}{4! \cdot 2!}$

B $\frac{6!}{2!}$

C $\frac{4!}{6! \cdot 2!}$

- 11** Select the correct value for when this notation is calculated

$${}_5\text{C}_3$$

A $\frac{120}{12}$

B $\frac{120}{2}$

C $\frac{720}{48}$

- 12** Select the correct description for this notation

$${}_4\text{C}_2$$

$${}_4\text{C}_2$$

A From a group of 4 options how many ways are there to choose 2 options in a specific order?

B Choose a set of 2 items from a group of 4 total items. Ignore the order.

C Choose 2 options in a specific order from a group of 4 options

- 13** Select the correct notation for this formula

$$\frac{6!}{5! \cdot 1!}$$

A ${}_6\text{C}_5$

B ${}_5\text{C}_6$

C ${}_6\text{P}_5$

- 14** Select the correct description for this formula

$$\frac{5!}{3! \cdot 2!}$$

$$\frac{5!}{3! \cdot 2!}$$

A From a group of 5 items select a set of 3 items regardless of order.

B With a group of 3 options how many ways are there to choose a set of 2 options regardless of order?

C Choose a set of 4 items from a group of 7 total items. Ignore the order.

- 15** Select the correct value for when this formula is calculated

$$\frac{6!}{4! \cdot 2!}$$

A $\frac{720}{48}$

B $\frac{720}{2}$

- 16** Select the correct formula for this description
- With a group of 6 options how many ways are there to choose a set of 2 options regardless of order?**

A $\frac{6!}{2! \cdot 4!}$

B $\frac{6!}{4!}$



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17 Select the correct notation for this description

With a group of 6 options how many ways are there to choose a set of 3 options regardless of order?

- | | |
|-------------|-------------|
| A ${}_6C_3$ | B ${}_6C_5$ |
| C ${}_6P_3$ | |

18 Select the correct value for when the described situation is calculated

From a group of 6 items select a set of 2 items regardless of order.

- | | |
|--------------------|--------------------|
| A $\frac{720}{24}$ | B $\frac{720}{48}$ |
|--------------------|--------------------|

19 With a group of 5 options how many ways are there to choose a set of 4 options regardless of order?

- | | |
|------------------|------------------|
| A $\binom{6}{4}$ | B $\binom{4}{5}$ |
| C $\binom{5}{4}$ | |

20 $\frac{\frac{6!}{4! \cdot 2!}}{2!}$

- | | |
|------------------|------------------|
| A $\binom{5}{3}$ | B $\binom{6}{4}$ |
| C $\binom{8}{3}$ | |

21 Select the bracket notation that means the same thing as this letter notation ${}_5C_4$

- | | |
|------------------|------------------|
| A $\binom{5}{2}$ | B $\binom{5}{4}$ |
| C $\binom{4}{2}$ | |

22 Select the letter notation that means the same thing as this bracket notation $\{6\text{choose}4\}$

- | | |
|-------------|-------------|
| A ${}_7C_4$ | B ${}_6P_4$ |
| C ${}_6C_4$ | |

23 Select the correct formula for this notation $\{6\text{choose}2\}$

- | | |
|----------------------------|----------------------------|
| A $\frac{2!}{6! \cdot 4!}$ | B $\frac{6!}{2! \cdot 4!}$ |
| C $\frac{6!}{4!}$ | |

24 Select the correct description for this notation $\{5\text{choose}2\}$

$$\binom{5}{2}$$

- | |
|--|
| A Choose 2 options in a specific order from a group of 5 options |
| B Choose a set of 2 items from a group of 5 total items. Ignore the order. |
| C From a group of 6 options how many ways are there to choose 3 options in a specific order? |



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25 Select the correct value for when this notation is calculated
 $\{5\text{choose}2\}$

$$\binom{5}{2}$$

A $\frac{120}{6}$	B $\frac{120}{12}$
C $\frac{24}{24}$	

26 What is the value of this probability expression?

$${}_5P_5$$

A 2	B 1
C 120	

27 What is the value of this probability expression?

$${}_6C_5$$

A 5	B 6
C 1	D 15

28 What is the value of this probability expression?

$$\binom{2}{2}$$

A $\frac{1}{6}$	B $\frac{1}{15}$
C 1	D $\frac{1}{4}$

29 What is the value of this probability expression?

$$({}_2P_2) \cdot ({}_4P_4)$$

A 48	B 6
C 1	D 240

30 What is the value of this probability expression?

$$({}_4C_2) \cdot ({}_6C_4)$$

A 60	B 15	C 90
D 9	E 6	

31 What is the value of this probability expression?

$$\binom{5}{2} \cdot \binom{4}{3}$$

A 10	B 40
C 1	D 200

32 What is the value of this probability expression?

$$\frac{1}{{}_5P_4}$$

A 1	B $\frac{1}{24}$
C $\frac{1}{120}$	D $\frac{1}{360}$



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33 What is the value of this probability expression?

$$\frac{1}{{}_5C_4}$$

A $\frac{1}{100}$	B $\frac{1}{15}$
C $\frac{1}{5}$	D $\frac{1}{75}$

34 What is the value of this probability expression?

$$\frac{1}{\binom{4}{2}}$$

A 1	B $\frac{1}{6}$
C $\frac{1}{75}$	D $\frac{1}{15}$

35 What is the value of this probability expression?

$$\frac{{}_5P_3}{{}_3P_3}$$

A 20	B 18	C 10
D $\frac{1}{120}$	E 1	

36 What is the value of this probability expression?

$$\frac{{}_5C_3}{{}_6C_2}$$

A $\frac{20}{3}$	B $\frac{1}{30}$
C $\frac{1}{2}$	D $\frac{2}{3}$

37 What is the value of this probability expression?

$$\frac{\binom{6}{5}}{\binom{4}{2}}$$

A 1	B $\frac{1}{6}$
C $\frac{1}{15}$	

38 What is the value of this probability expression?

$$\frac{1}{({}_3P_3) \cdot ({}_5P_2)}$$

A 1	B 120
C $\frac{1}{6}$	D $\frac{1}{60}$
E $\frac{1}{120}$	

39 What is the value of this probability expression?

$$\frac{1}{({}_5C_5) \cdot ({}_5C_3)}$$

A 1	B $\frac{1}{10}$
C 6	D $\frac{3}{5}$



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40 What is the value of this probability expression?

$$\frac{1}{\binom{5}{3} \cdot \binom{5}{3}}$$

A $\frac{1}{50}$	B 1
C $\frac{1}{100}$	D $\frac{1}{10}$

41 What is the value of this probability expression?

$$\frac{{}_4P_2}{({}_4P_4) \cdot ({}_4P_2)}$$

A 1	B $\frac{1}{240}$	C $\frac{1}{288}$
D 12	E $\frac{1}{24}$	

42 What is the value of this probability expression?

$$\frac{{}_4C_3}{({}_5C_5) \cdot ({}_3C_3)}$$

A 20	B $\frac{4}{3}$	C $\frac{2}{3}$
D 4	E 6	

43 What is the value of this probability expression?

$$\frac{\binom{4}{4}}{\binom{6}{5} \cdot \binom{3}{3}}$$

A $\frac{1}{6}$	B $\frac{1}{5}$
C 1	

44 What is the value of this probability expression?

$$\frac{({}_3P_2) \cdot ({}_4P_2)}{{}_5P_5}$$

A $\frac{6}{5}$	B $\frac{1}{5}$	C 72
D $\frac{3}{10}$	E $\frac{3}{5}$	

45 What is the value of this probability expression?

$$\frac{({}_4C_4) \cdot ({}_2C_2)}{{}_6C_4}$$

A 1	B $\frac{4}{15}$
C $\frac{1}{5}$	D $\frac{1}{15}$

46 What is the value of this probability expression?

$$\frac{\binom{6}{2} \cdot \binom{6}{2}}{\binom{3}{3}}$$

A 90	B 225
C 1	D 300