120 · NEW BRUNSWICK

120
Practice Test

Unit D: Permutations, Combinations, and Binomial Theorem

25 Questions

Original practice test based on the New Brunswick curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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Question 1

Choosing 3 marbles from 10 different marbles is counted with

A) combinations

B) permutations

C) the fundamental counting principle only

D) factorials only

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Question 2

Choosing a committee of 4 from 12 people is counted with

A) permutations

B) combinations

C) the fundamental counting principle only

D) factorials only

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Question 3

The number of permutations of 9 objects taken 2 at a time is

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Question 4

The number of permutations of 10 objects taken 3 at a time is

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Question 5

The number of ways to arrange 4 flags chosen from 6 different flags is

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Question 6

A committee of 2 is chosen from 8 people. The number of different committees is

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Question 7

The number of combinations of 7 objects taken 3 at a time is

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Question 8

The number of combinations of 8 objects taken 4 at a time is

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Question 9

The number of combinations of 9 objects taken 2 at a time is

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Question 10

The number of ways to choose 4 books from 10 different books is

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Question 11

A hand of 3 cards is dealt from a standard deck. The number of different hands is

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Question 12

A club of 12 members chooses a president and a vice president. The number of ways to fill the two offices is

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Question 13

The number of ways to choose a president and a vice president from 5 people is

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Question 14

The number of ways to choose a president and a vice president from 6 people is

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Question 15

The number of ways to arrange 2 playing cards chosen from 7 different cards is

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Question 16

Ten students run for chair and secretary, two different offices. The number of possible results is

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Question 17

Choosing a president and then a vice president from a group is counted with permutations because the offices are

A) different

B) the same

C) empty

D) unfilled

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Question 18

The value of $C(7,\ 3)$ is

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Question 19

The binomial coefficient 5 choose 2 is

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Question 20

The number of ways to choose 3 billiard balls from 6 different billiard balls is

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Question 21

The binomial coefficient 7 choose 2 is

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Question 22

The coefficient of x^2 in $(1 + x)^4$ is

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Question 23

Pascal triangle row $1, 4, 6, 4, 1$ gives the coefficients of $(x + y)^4$. The middle coefficient is

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Question 24

Nine runners compete for first and second place. The number of possible results is

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Question 25

In the expansion *of* $(x + 2)^4$, *the* coefficient *of* x^2 *is*

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ANSWER KEY

1. A
2. B
3. 72
4. 720
5. 360
6. 28
7. 35
8. 70
9. 36
10. 210
11. 22100
12. 132
13. 20
14. 30
15. 42
16. 90
17. A
18. 35
19. 10
20. 20
21. 21
22. 6
23. 6
24. 72
25. 24

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