BRITISH COLUMBIA FOUNDATIONS OF MATHEMATICS 12 (MFOM-12) · UNIT C · 25 QUESTIONS

Combinatorics and Probability — Practice Test

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.

1 **A student owns 3 shirts and 4 pairs of pants. The number of shirt and pants outfits is ____.**



ANSWER

Understand It with Pulse | Flag a mistake

2 **The number of ordered choices of 3 students from 5, with no repeats, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **The number of ways to choose 3 students from 7, where order does not matter, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **The number of ways to arrange 5 different books on a shelf is ____.**



ANSWER _____

Understand It with Pulse | Flag a mistake

5 The probability of two heads in two tosses of a fair coin is

A $\frac{1}{4}$

B $\frac{1}{2}$

C $\frac{3}{4}$

D $\frac{1}{3}$

Understand It with Pulse | Flag a mistake

6 The probability that two fair dice sum to 7 is



A $\frac{1}{12}$

B $\frac{1}{6}$

C $\frac{1}{4}$

D $\frac{1}{3}$

Understand It with Pulse | Flag a mistake

7 **If an event has probability $\frac{1}{4}$, its odds in favour are**

- A 1 to 3
- B 1 to 4
- C 3 to 1
- D 4 to 1

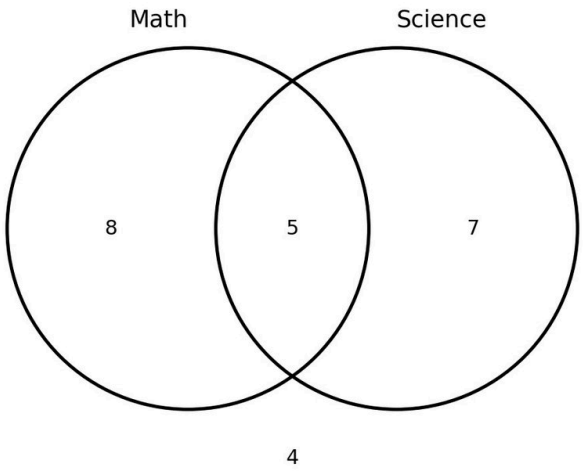
Understand It with Pulse | Flag a mistake

8 **A game pays 10 dollars with probability 0.3 and loses 2 dollars otherwise. The expected value, in dollars, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **The diagram shows students who take Math, Science, or neither. The number who take Math only is**



Question 9

The diagram shows students who take Math, Science, or neither. The number who take Math only is

A) 5

B) 7

C) 8

D) 13

A 5

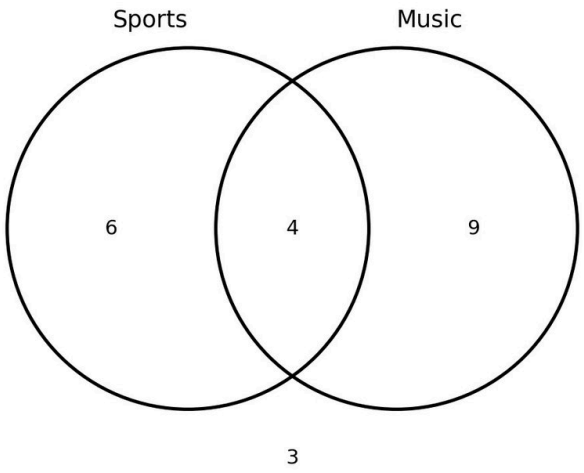
B 7

C 8

D 13

Understand It with Pulse **Flag a mistake**

10 **The diagram shows students who join Sports, Music, or neither. The number who join both Sports and Music is**



Question 10

The diagram shows students who join Sports, Music, or neither. The number who join both Sports and Music is

A) 3

B) 4

C) 6

D) 9

A 3

B 4

C 6

D 9

Understand It with Pulse **Flag a mistake**

11 **The number of ways to choose a committee of 4 from 9 people is ____.**

ANSWER

Understand It with Pulse | Flag a mistake

12 **A menu offers 4 main dishes, 3 desserts and 5 drinks. The number of meals with one of each is ____.**



ANSWER

Understand It with Pulse | Flag a mistake

13 **The probability of drawing an ace from a standard 52-card deck is**



A $\frac{1}{52}$

B $\frac{1}{13}$

C $\frac{1}{4}$

D $\frac{4}{13}$

Understand It with Pulse | Flag a mistake

14 If the probability of rain is 0.7, the probability of no rain is

- **A** $\frac{1}{10}$
- **B** $\frac{3}{10}$
- **C** $\frac{7}{10}$
- **D** $\frac{1}{3}$

Understand It with Pulse | Flag a mistake

15 A raffle ticket costs 2 dollars. A 100 dollar prize is won with probability $\frac{1}{50}$. The net expected value, in dollars, is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

16 If the odds in favour of a team are 3 to 2, the probability the team wins is

- **A** $\frac{2}{3}$
- **B** $\frac{3}{2}$
- **C** $\frac{3}{5}$
- **D** $\frac{2}{5}$

Understand It with Pulse | Flag a mistake

17 The number of distinct arrangements of the letters in LEVEL is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **The number of ways to choose 2 pizza toppings from 6 is ____.**



ANSWER _____

Understand It with Pulse | Flag a mistake

19 The probability that two fair dice are both even is

- **A** $\frac{1}{2}$
- **B** $\frac{1}{3}$
- **C** $\frac{1}{4}$
- **D** $\frac{1}{6}$

Understand It with Pulse | Flag a mistake

20 A student owns 5 shirts, 3 pairs of pants and 2 hats. The number of outfits with one of each is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **The difference between a permutation and a combination is that**

- **A** order matters in a permutation only
- **B** order matters in a combination only
- **C** repeats are allowed in neither
- **D** both count the same choices

Understand It with Pulse | Flag a mistake

22 **A spinner has 8 equal sections, 3 of them red. The probability of landing on red is**

- **A** $\frac{1}{8}$
- **B** $\frac{3}{8}$
- **C** $\frac{5}{8}$
- **D** $\frac{3}{4}$

Understand It with Pulse | Flag a mistake

23 The expected value of one roll of a fair six-sided die is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

24 There are 3 routes from town A to town B and 5 routes from B to C. The number of routes from A to C through B is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

25 The probability of rolling a number greater than 4 on a fair die is

A $\frac{1}{6}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. 12
2. 60
3. 35
4. 120
5. A
6. B
7. A
8. 1.6
9. C
10. B
11. 126
12. 60
13. B
14. B
15. 0
16. C
17. 30
18. 15
19. C
20. 30
21. A
22. B
23. 3.5
24. 15
25. B

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