



THE MATH HUB

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PROBABILITY, PERMUTATIONS & COMBINATIONS MCQs

100 FULLY SOLVED MCQs

PPSC, FPSC & ONE PAPER EXAMS

NTS • CSS MPT • PMS • Government Job Tests

Probability extbullet Coins extbullet Dice extbullet Cards extbullet Permutations extbullet
Combinations

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PROBABILITY, PERMUTATIONS & COMBINATIONS MCQs | 100 FULLY SOLVED MCQs**Fast Foundation for One-Paper Exams****Probability**

$$P(E) = \frac{\text{Favorable outcomes}}{\text{Total equally likely outcomes}}$$

Complement

$$P(E^c) = 1 - P(E)$$

Permutation

$${}^n P_r = \frac{n!}{(n-r)!}$$

Combination

$${}^n C_r = \frac{n!}{r!(n-r)!}$$

Two dice

$$6 \times 6 = 36 \text{ ordered outcomes}$$

Selection vs arrangement Order matters: permutation. Order does not matter: combination.

Basic Probability and Complements**MCQ 1**

An experiment has 10 equally likely outcomes, of which 3 are favorable. Find the probability.

- A. $\frac{3}{10}$ B. $\frac{4}{10}$
C. $\frac{2}{10}$ D. $\frac{7}{10}$

Solution

$$P(E) = \frac{3}{10} = \frac{3}{10}$$

Final Answer $\frac{3}{10}$ **MCQ 2**

An experiment has 9 equally likely outcomes, of which 4 are favorable. Find the probability.

- A. $\frac{5}{9}$ B. $\frac{3}{9}$
C. $\frac{4}{9}$ D. $\frac{5}{9}$

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)

Solution

$$P(E) = \frac{4}{9} = \frac{4}{9}$$

Final Answer $\frac{4}{9}$ **MCQ 3**

An experiment has 12 equally likely outcomes, of which 5 are favorable. Find the probability.

- A. $\frac{4}{12}$ B. $\frac{7}{12}$
C. $\frac{5}{12}$ D. $\frac{6}{12}$

Solution

$$P(E) = \frac{5}{12} = \frac{5}{12}$$

Final Answer $\frac{5}{12}$ **MCQ 4**

An experiment has 20 equally likely outcomes, of which 7 are favorable. Find the probability.

- A. $\frac{13}{20}$ B. $\frac{7}{20}$
C. $\frac{8}{20}$ D. $\frac{6}{20}$

Solution

$$P(E) = \frac{7}{20} = \frac{7}{20}$$

Final Answer $\frac{7}{20}$ **MCQ 5**

An experiment has 25 equally likely outcomes, of which 9 are favorable. Find the probability.

- A. $\frac{9}{25}$ B. $\frac{10}{25}$
C. $\frac{8}{25}$ D. $\frac{16}{25}$

Solution

$$P(E) = \frac{9}{25} = \frac{9}{25}$$

Final Answer $\frac{9}{25}$ **MCQ 6**

An experiment has 7 equally likely outcomes, of which 2 are favorable. Find the probability.

- A. $\frac{3}{7}$ B. $\frac{1}{7}$
C. $\frac{5}{7}$ D. $\frac{2}{7}$

Solution

$$P(E) = \frac{2}{7} = \frac{2}{7}$$

Final Answer $\frac{2}{7}$ **MCQ 7**

An experiment has 15 equally likely outcomes, of which 6 are favorable. Find the probability.

- A. $\frac{5}{15}$ B. $\frac{9}{15}$
C. $\frac{2}{5}$ D. $\frac{7}{15}$

Solution

$$P(E) = \frac{6}{15} = \frac{2}{5}$$

Final Answer $\frac{2}{5}$

MCQ 8

An experiment has 18 equally likely outcomes, of which 8 are favorable. Find the probability.

- A. $\frac{10}{18}$ B. $\frac{4}{9}$
C. $\frac{9}{18}$ D. $\frac{7}{18}$

Solution

$$P(E) = \frac{8}{18} = \frac{4}{9}$$

Final Answer $\frac{4}{9}$ **MCQ 9**

An experiment has 5 equally likely outcomes, of which 1 are favorable. Find the probability.

- A. $\frac{1}{5}$ B. $\frac{2}{5}$
C. $\frac{4}{5}$ D.

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)

Solution

$$P(E) = \frac{1}{5} = \frac{1}{5}$$

Final Answer $\frac{1}{5}$ **MCQ 10**

An experiment has 30 equally likely outcomes, of which 11 are favorable. Find the probability.

- A. $\frac{12}{30}$ B. $\frac{10}{30}$
C. $\frac{19}{30}$ D. $\frac{11}{30}$

Solution

$$P(E) = \frac{11}{30} = \frac{11}{30}$$

Final Answer $\frac{11}{30}$ **MCQ 11**

If $P(E) = \frac{1}{4}$, find $P(E^c)$.

- A. 1 B. 0
C. $\frac{3}{4}$ D. $\frac{1}{4}$

Solution

$$P(E^c) = 1 - \frac{1}{4} = \frac{3}{4}$$

Final Answer $\frac{3}{4}$ **MCQ 12**

If $P(E) = \frac{2}{5}$, find $P(E^c)$.

- A. 0 B. $\frac{3}{5}$
C. $\frac{2}{5}$ D. 1

Solution

$$P(E^c) = 1 - \frac{2}{5} = \frac{3}{5}$$

Final Answer $\frac{3}{5}$ **MCQ 13**

If $P(E) = \frac{3}{8}$, find $P(E^c)$.

- A. $\frac{5}{8}$ B. $\frac{3}{8}$
C. 1 D. 0

Solution

$$P(E^c) = 1 - \frac{3}{8} = \frac{5}{8}$$

Final Answer $\frac{5}{8}$ **MCQ 14**

If $P(E) = \frac{1}{3}$, find $P(E^c)$.

- A. $\frac{1}{3}$ B. 1
C. 0 D. $\frac{2}{3}$

Solution

$$P(E^c) = 1 - \frac{1}{3} = \frac{2}{3}$$

Final Answer $\frac{2}{3}$ **MCQ 15**

If $P(E) = \frac{5}{12}$, find $P(E^c)$.

- A. 1 B. 0
C. $\frac{7}{12}$ D. $\frac{5}{12}$

Solution

$$P(E^c) = 1 - \frac{5}{12} = \frac{7}{12}$$

Final Answer $\frac{7}{12}$

MCQ 16If $P(E) = \frac{7}{10}$, find $P(E^c)$.

- A. 0
 B. $\frac{3}{10}$
 C. $\frac{7}{10}$
 D. 1

Solution

$$P(E^c) = 1 - \frac{7}{10} = \frac{3}{10}$$

Final Answer

$$\frac{3}{10}$$

MCQ 17If $P(E) = \frac{4}{9}$, find $P(E^c)$.

- A. $\frac{5}{9}$
 B. $\frac{4}{9}$
 C. 1
 D. 0

Solution

$$P(E^c) = 1 - \frac{4}{9} = \frac{5}{9}$$

Final Answer

$$\frac{5}{9}$$

MCQ 18If $P(E) = \frac{3}{5}$, find $P(E^c)$.

- A. $\frac{3}{5}$
 B. 1
 C. 0
 D. $\frac{2}{5}$

Solution

$$P(E^c) = 1 - \frac{3}{5} = \frac{2}{5}$$

Final Answer

$$\frac{2}{5}$$

MCQ 19If $P(E) = \frac{11}{20}$, find $P(E^c)$.

- A. 1
 B. 0
 C. $\frac{9}{20}$
 D. $\frac{11}{20}$

Solution

$$P(E^c) = 1 - \frac{11}{20} = \frac{9}{20}$$

Final Answer

$$\frac{9}{20}$$

MCQ 20If $P(E) = \frac{1}{2}$, find $P(E^c)$.

- A. $\frac{1}{2}$
 B. $\frac{1}{2}$
 C. 1
 D. 0

Solution

$$P(E^c) = 1 - \frac{1}{2} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

Dice and Coin Problems**MCQ 21**

A fair die is rolled once. Find the probability of getting even.

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

Solution

$$P = \frac{3}{6} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

MCQ 22

A fair die is rolled once. Find the probability of getting odd.

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

Solution

$$P = \frac{3}{6} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

MCQ 23

A fair die is rolled once. Find the probability of getting greater than 4.

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

Solution

$$P = \frac{2}{6} = \frac{1}{3}$$

Final Answer

$$\frac{1}{3}$$

MCQ 24

A fair die is rolled once. Find the probability of getting less than 3.

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

Solution

$$P = \frac{2}{6} = \frac{1}{3}$$

Final Answer

$$\frac{1}{3}$$

MCQ 25

A fair die is rolled once. Find the probability of getting prime.

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

Solution

$$P = \frac{3}{6} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

MCQ 26

A fair die is rolled once. Find the probability of getting multiple of 3.

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

Solution

$$P = \frac{2}{6} = \frac{1}{3}$$

Final Answer

$$\frac{1}{3}$$

MCQ 27

A fair die is rolled once. Find the probability of getting at least 5.

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

Solution

$$P = \frac{2}{6} = \frac{1}{3}$$

Final Answer

$$\frac{1}{3}$$

MCQ 28

A fair die is rolled once. Find the probability of getting not 6.

- A. $\frac{2}{3}$ B. $\frac{5}{6}$
 C. $\frac{1}{6}$ D. $\frac{1}{2}$

Solution

$$P = \frac{5}{6} = \frac{5}{6}$$

Final Answer

$$\frac{5}{6}$$

MCQ 29

Two fair dice are rolled. Find the probability that the sum is 7.

- A. $\frac{1}{6}$ B. $\frac{1}{6}$
 C. $\frac{1}{12}$ D. $\frac{5}{36}$

Solution

$$\text{Favorable pairs} = 6, \quad P = \frac{6}{36} = \frac{1}{6}$$

Final Answer

$$\frac{1}{6}$$

MCQ 30

Two fair dice are rolled. Find the probability that the sum is 8.

- A. $\frac{1}{6}$ B. $\frac{1}{12}$
 C. $\frac{5}{36}$ D. $\frac{5}{36}$

Solution

$$\text{Favorable pairs} = 5, \quad P = \frac{5}{36} = \frac{5}{36}$$

Final Answer

$$\frac{5}{36}$$

MCQ 31

Two fair dice are rolled. Find the probability that the sum is 9.

- A. $\frac{1}{12}$ B. $\frac{5}{36}$
 C. $\frac{1}{9}$ D. $\frac{1}{6}$

Solution

$$\text{Favorable pairs} = 4, \quad P = \frac{4}{36} = \frac{1}{9}$$

Final Answer

$$\frac{1}{9}$$

MCQ 32

Two fair dice are rolled. Find the probability that the sum is 10.

- A. $\frac{5}{36}$ B. $\frac{1}{12}$
C. $\frac{1}{6}$ D. $\frac{1}{12}$

Solution

$$\text{Favorable pairs} = 3, \quad P = \frac{3}{36} = \frac{1}{12}$$

Final Answer

$$\frac{1}{12}$$

MCQ 33

Two fair dice are rolled. Find the probability that the sum is 11.

- A. $\frac{1}{18}$ B. $\frac{1}{6}$
C. $\frac{1}{12}$ D. $\frac{5}{36}$

Solution

$$\text{Favorable pairs} = 2, \quad P = \frac{2}{36} = \frac{1}{18}$$

Final Answer

$$\frac{1}{18}$$

MCQ 34

Two fair dice are rolled. Find the probability that the sum is 12.

- A. $\frac{1}{6}$ B. $\frac{1}{12}$
C. $\frac{5}{36}$ D. $\frac{1}{36}$

Solution

$$\text{Favorable pairs} = 1, \quad P = \frac{1}{36} = \frac{1}{36}$$

Final Answer

$$\frac{1}{36}$$

MCQ 35

Two fair dice are rolled. Find the probability that the sum is 6.

- A. $\frac{1}{12}$ B. $\frac{5}{36}$
C. $\frac{5}{36}$ D. $\frac{1}{6}$

Solution

$$\text{Favorable pairs} = 5, \quad P = \frac{5}{36} = \frac{5}{36}$$

Final Answer

$$\frac{5}{36}$$

MCQ 36

2 fair coins are tossed. Find the probability of exactly one head.

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

Solution

$$P = \frac{2}{4} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

MCQ 37

2 fair coins are tossed. Find the probability of two heads.

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

Solution

$$P = \frac{1}{4} = \frac{1}{4}$$

Final Answer

$$\frac{1}{4}$$

MCQ 38

2 fair coins are tossed. Find the probability of at least one head.

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

Solution

$$P = \frac{3}{4} = \frac{3}{4}$$

Final Answer

$$\frac{3}{4}$$

MCQ 39

2 fair coins are tossed. Find the probability of no head.

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

Solution

$$P = \frac{1}{4} = \frac{1}{4}$$

Final Answer

$$\frac{1}{4}$$

MCQ 40

3 fair coins are tossed. Find the probability of exactly two heads.

- A. $\frac{3}{4}$ B. $\frac{3}{8}$
C. $\frac{1}{4}$ D. $\frac{1}{2}$

Solution

$$P = \frac{3}{8} = \frac{3}{8}$$

Final Answer

$$\frac{3}{8}$$

MCQ 41

3 fair coins are tossed. Find the probability of three heads.

- A. $\frac{1}{8}$ B. $\frac{1}{4}$
C. $\frac{1}{2}$ D. $\frac{3}{4}$

Solution

$$P = \frac{1}{8} = \frac{1}{8}$$

Final Answer

$$\frac{1}{8}$$

MCQ 42

3 fair coins are tossed. Find the probability of at least one tail.

- A. $\frac{1}{4}$ B. $\frac{1}{2}$
C. $\frac{3}{4}$ D. $\frac{7}{8}$

Solution

$$P = \frac{7}{8} = \frac{7}{8}$$

Final Answer

$$\frac{7}{8}$$

MCQ 43

3 fair coins are tossed. Find the probability of exactly one tail.

- A. $\frac{1}{2}$ B. $\frac{3}{4}$
C. $\frac{3}{8}$ D. $\frac{1}{4}$

Solution

$$P = \frac{3}{8} = \frac{3}{8}$$

Final Answer

$$\frac{3}{8}$$

MCQ 44

3 fair coins are tossed. Find the probability of all same.

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

Solution

$$P = \frac{2}{8} = \frac{1}{4}$$

Final Answer

$$\frac{1}{4}$$

MCQ 45

3 fair coins are tossed. Find the probability of at least two heads.

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

Solution

$$P = \frac{4}{8} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

Balls and Cards**MCQ 46**

A bag contains 5 red and 3 blue balls. One ball is drawn. Find the probability of drawing a red ball.

- A. $\frac{1}{2}$ B. $\frac{1}{3}$
C. $\frac{2}{3}$ D. $\frac{5}{8}$

Solution

$$P = \frac{5}{8} = \frac{5}{8}$$

Final Answer

$$\frac{5}{8}$$

MCQ 47

A bag contains 6 red and 4 blue balls. One ball is drawn. Find the probability of drawing a red ball.

- A. $\frac{1}{3}$ B. $\frac{2}{3}$
C. $\frac{3}{5}$ D. $\frac{1}{2}$

Solution

$$P = \frac{6}{10} = \frac{3}{5}$$

Final Answer

$$\frac{3}{5}$$

MCQ 48

A bag contains 7 red and 5 blue balls. One ball is drawn. Find the probability of drawing a blue ball.

- A. $\frac{2}{3}$ B. $\frac{5}{12}$
C. $\frac{1}{2}$ D. $\frac{1}{3}$

Solution

$$P = \frac{5}{12} = \frac{5}{12}$$

Final Answer

$$\frac{5}{12}$$

MCQ 49

A bag contains 8 red and 2 blue balls. One ball is drawn. Find the probability of drawing a blue ball.

- A. $\frac{1}{5}$ B. $\frac{1}{2}$
C. $\frac{1}{3}$ D. $\frac{2}{3}$

Solution

$$P = \frac{2}{10} = \frac{1}{5}$$

Final Answer

$$\frac{1}{5}$$

MCQ 50

A bag contains 9 red and 6 blue balls. One ball is drawn. Find the probability of drawing a red ball.

- A. $\frac{1}{2}$ B. $\frac{1}{3}$
C. $\frac{2}{3}$ D. $\frac{3}{5}$

Solution

$$P = \frac{9}{15} = \frac{3}{5}$$

Final Answer

$$\frac{3}{5}$$

MCQ 51

A bag contains 4 red and 6 blue balls. One ball is drawn. Find the probability of drawing a blue ball.

- A. $\frac{1}{3}$ B. $\frac{2}{3}$
C. $\frac{3}{5}$ D. $\frac{1}{2}$

Solution

$$P = \frac{6}{10} = \frac{3}{5}$$

Final Answer

$$\frac{3}{5}$$

MCQ 52

A bag contains 3 red and 7 blue balls. One ball is drawn. Find the probability of drawing a red ball.

- A. $\frac{2}{3}$ B. $\frac{3}{10}$
C. $\frac{1}{2}$ D. $\frac{1}{3}$

Solution

$$P = \frac{3}{10} = \frac{3}{10}$$

Final Answer

$$\frac{3}{10}$$

MCQ 53

A bag contains 10 red and 5 blue balls. One ball is drawn. Find the probability of drawing a blue ball.

- A. $\frac{1}{3}$ B. $\frac{1}{2}$
C. $\frac{1}{3}$ D. $\frac{2}{3}$

Solution

$$P = \frac{5}{15} = \frac{1}{3}$$

Final Answer

$$\frac{1}{3}$$

MCQ 54

One card is drawn from a standard deck of 52 cards. Find the probability of drawing an ace.

- A. $\frac{1}{13}$ B. $\frac{1}{4}$
C. $\frac{1}{2}$ D. $\frac{1}{13}$

Solution

$$P = \frac{4}{52} = \frac{1}{13}$$

Final Answer

$$\frac{1}{13}$$

MCQ 55

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a king.

- A. $\frac{1}{4}$ B. $\frac{1}{2}$
C. $\frac{1}{13}$ D. $\frac{1}{13}$

Solution

$$P = \frac{4}{52} = \frac{1}{13}$$

Final Answer

$$\frac{1}{13}$$

MCQ 56

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a heart.

- A. $\frac{1}{2}$ B. $\frac{1}{4}$
C. $\frac{1}{13}$ D. $\frac{1}{4}$

Solution

$$P = \frac{13}{52} = \frac{1}{4}$$

Final Answer

$$\frac{1}{4}$$

MCQ 57

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a red card.

- A. $\frac{1}{2}$ B. $\frac{1}{13}$
C. $\frac{1}{4}$ D. $\frac{1}{2}$

Solution

$$P = \frac{26}{52} = \frac{1}{2}$$

Final Answer

$$\frac{1}{2}$$

MCQ 58

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a face card.

- A. $\frac{1}{13}$ B. $\frac{1}{4}$
C. $\frac{1}{2}$ D. $\frac{3}{13}$

Solution

$$P = \frac{12}{52} = \frac{3}{13}$$

Final Answer

$$\frac{3}{13}$$

MCQ 59

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a black queen.

- A. $\frac{1}{4}$ B. $\frac{1}{2}$
C. $\frac{1}{26}$ D. $\frac{1}{13}$

Solution

$$P = \frac{2}{52} = \frac{1}{26}$$

Final Answer

$$\frac{1}{26}$$

MCQ 60

One card is drawn from a standard deck of 52 cards. Find the probability of drawing a diamond.

- A. $\frac{1}{2}$ B. $\frac{1}{4}$
C. $\frac{1}{13}$ D. $\frac{1}{4}$

Solution

$$P = \frac{13}{52} = \frac{1}{4}$$

Final Answer

$$\frac{1}{4}$$

Permutations and Arrangements**MCQ 61**

Evaluate $5P_2$.

- A. 20 B. 10
C. 25 D. 22

Solution

$$5P_2 = \frac{5!}{(3)!} = 20$$

Final Answer

20

MCQ 62

Evaluate $6P_2$.

- A. 15 B. 12
C. 36 D. 30

Solution

$$6P_2 = \frac{6!}{(4)!} = 30$$

Final Answer

30

MCQ 63

Evaluate $6P_3$.

- A. 18 B. 126
C. 120 D. 20

Solution

$$6P_3 = \frac{6!}{(3)!} = 120$$

Final Answer

120

MCQ 64Evaluate $7P_2$.

- A. 49 B. 42
C. 21 D. 14

Solution

$$7P_2 = \frac{7!}{(5)!} = 42$$

Final Answer

42

MCQ 65Evaluate $7P_3$.

- A. 210 B. 35
C. 21 D. 217

Solution

$$7P_3 = \frac{7!}{(4)!} = 210$$

Final Answer

210

MCQ 66Evaluate $8P_2$.

- A. 28 B. 16
C. 64 D. 56

Solution

$$8P_2 = \frac{8!}{(6)!} = 56$$

Final Answer

56

MCQ 67Evaluate $8P_3$.

- A. 24 B. 344
C. 336 D. 56

Solution

$$8P_3 = \frac{8!}{(5)!} = 336$$

Final Answer

336

MCQ 68Evaluate $5P_3$.

- A. 65 B. 60
C. 10 D. 15

Solution

$$5P_3 = \frac{5!}{(2)!} = 60$$

Final Answer

60

MCQ 69Evaluate $9P_2$.

- A. 72 B. 36
C. 18 D. 81

Solution

$$9P_2 = \frac{9!}{(7)!} = 72$$

Final Answer

72

MCQ 70Evaluate $9P_3$.

- A. 84 B. 27
C. 513 D. 504

Solution

$$9P_3 = \frac{9!}{(6)!} = 504$$

Final Answer

504

MCQ 71

How many ways can 4 distinct books be arranged in a row?

- A. 6 B. 26
C. 24 D. 16

Solution

$$4! = 24$$

Final Answer

24

MCQ 72

How many ways can 5 distinct books be arranged in a row?

- A. 24 B. 120
C. 25 D. 10

Solution

$$5! = 120$$

Final Answer

120

MCQ 73

How many ways can 6 distinct books be arranged in a row?

- A. 720 B. 36
C. 15 D. 120

Solution

$$6! = 720$$

Final Answer

720

MCQ 74

How many ways can 7 distinct books be arranged in a row?

- A. 49 B. 21
C. 720 D. 5040

Solution

$$7! = 5040$$

Final Answer

5040

MCQ 75

How many ways can 8 distinct books be arranged in a row?

- A. 28 B. 5040
C. 40320 D. 64

Solution

$$8! = 40320$$

Final Answer

40320

MCQ 76

How many distinct arrangements are possible for the letters of LEVEL?

- A. 35 B. 30
C. 120 D. 15

Solution

$$\frac{5!}{2!2!} = 30$$

Final Answer

30

MCQ 77

How many distinct arrangements are possible for the letters of MOM?

- A. 3 B. 6
C. 1 D. 4

Solution

$$\frac{3!}{2!} = 3$$

Final Answer

3

MCQ 78

How many distinct arrangements are possible for the letters of BOOK?

- A. 24 B. 6
C. 16 D. 12

Solution

$$\frac{4!}{2!} = 12$$

Final Answer

12

MCQ 79

How many distinct arrangements are possible for the letters of NOON?

- A. 3 B. 10
C. 6 D. 24

Solution

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

Final Answer

6

MCQ 80

How many distinct arrangements are possible for the letters of APPLE?

- A. 65 B. 60
C. 120 D. 30

Solution

$$\frac{5!}{2!} = 60$$

Final Answer

60

Combinations and Selection Problems**MCQ 81**

Evaluate $5C_2$.

- A. 10 B. 20
C. 12 D. 11

Solution

$$5C_2 = \frac{5!}{2!(3)!} = 10$$

Final Answer

10

MCQ 82

Evaluate $6C_2$.

- A. 30 B. 12
C. 17 D. 15

Solution

$$6C_2 = \frac{6!}{2!(4)!} = 15$$

Final Answer

15

MCQ 83

Evaluate $6C_3$.

- A. 18 B. 23
C. 20 D. 120

Solution

$$6C_3 = \frac{6!}{3!(3)!} = 20$$

Final Answer

20

MCQ 84

Evaluate $7C_2$.

- A. 23 B. 21
C. 42 D. 14

Solution

$$7C_2 = \frac{7!}{2!(5)!} = 21$$

Final Answer

21

MCQ 85

Evaluate $7C_3$.

- A. 35 B. 210
C. 21 D. 38

Solution

$$7C_3 = \frac{7!}{3!(4)!} = 35$$

Final Answer

35

MCQ 86

Evaluate $8C_2$.

- A. 56 B. 16
C. 30 D. 28

Solution

$$8C_2 = \frac{8!}{2!(6)!} = 28$$

Final Answer

28

MCQ 87

Evaluate $8C_3$.

- A. 24 B. 59
C. 56 D. 336

Solution

$$8C_3 = \frac{8!}{3!(5)!} = 56$$

Final Answer

56

MCQ 88Evaluate $8C_4$.

- A. 74 B. 70
C. 1680 D. 32

Solution

$$8C_4 = \frac{8!}{4!(4)!} = 70$$

Final Answer

70

MCQ 89Evaluate $9C_2$.

- A. 36 B. 72
C. 18 D. 38

Solution

$$9C_2 = \frac{9!}{2!(7)!} = 36$$

Final Answer

36

MCQ 90Evaluate $9C_3$.

- A. 504 B. 27
C. 87 D. 84

Solution

$$9C_3 = \frac{9!}{3!(6)!} = 84$$

Final Answer

84

MCQ 91Evaluate $10C_2$.

- A. 20 B. 47
C. 45 D. 90

Solution

$$10C_2 = \frac{10!}{2!(8)!} = 45$$

Final Answer

45

MCQ 92Evaluate $10C_3$.

- A. 123 B. 120
C. 720 D. 30

Solution

$$10C_3 = \frac{10!}{3!(7)!} = 120$$

Final Answer

120

MCQ 93Evaluate $10C_4$.

- A. 210 B. 5040
C. 40 D. 214

Solution

$$10C_4 = \frac{10!}{4!(6)!} = 210$$

Final Answer

210

MCQ 94Evaluate $11C_2$.

- A. 110 B. 22
C. 57 D. 55

Solution

$$11C_2 = \frac{11!}{2!(9)!} = 55$$

Final Answer

55

MCQ 95Evaluate $12C_2$.

- A. 24 B. 68
C. 66 D. 132

Solution

$$12C_2 = \frac{12!}{2!(10)!} = 66$$

Final Answer

66

Mixed High-Yield P&C

MCQ 96

Choose a committee of 3 from 8 people.

- A. 112 B. 56
C. 61 D. 51

Solution

$${}^8C_3 = 56$$

Final Answer

56

MCQ 97

Arrange 3 of 7 people in 3 distinct chairs.

- A. 210 B. 215
C. 205 D. 420

Solution

$${}^7P_3 = 210$$

Final Answer

210

MCQ 98

Choose 2 questions from 10.

- A. 50 B. 40
C. 90 D. 45

Solution

$${}^{10}C_2 = 45$$

Final Answer

45

MCQ 99

Arrange 5 distinct flags in a row.

- A. 115 B. 240
C. 120 D. 125

Solution

$$5! = 120$$

Final Answer

120

MCQ 100

Choose a captain and vice-captain from 6 players.

- A. 60 B. 30
C. 35 D. 25

Solution

$${}^6P_2 = 30$$

Final Answer

30

RAPID REVISION GRID | PROBABILITY / P&C

Fair die

$$P = \frac{\text{favorable faces}}{6}$$

Standard deck 52 cards, 4 suits, 13 cards per suit.**Coin outcomes** 2^n outcomes for n fair coin tosses.**Repeated letters**

$$\frac{n!}{a!b! \dots}$$

Identity

$${}^nC_r = {}^nC_{n-r}$$

Exam check A probability must lie between 0 and 1.

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