L13 : PnC

1-Tut : Value Of Factorial

Send Feedback

What is the value of 6!?

Options

This problem has only one correct answer

120
240
720
5760

Correct Answer : C

Solution Description

6!= 6×5×4×3×2×1=720

2-Tut : Find value?

Send Feedback

What is the value of 10C3 ?

Options

This problem has only one correct answer

120
60
720
None Of These

Correct Answer : A

3-Tut : Number Of Ways

Send Feedback

There are 10 boys and 8 girls in a group. Two boys are to be selected and two girls are to be selected for the play. In how many ways can they be selected?

Options

This problem has only one correct answer

18
73
80
1260

Correct Answer : D

Solution Description

Number of ways of selecting boys = 10C2 ×8C2 = 45 × 28 = 1260.

4-Tut : Number Of Handshakes

Send Feedback

10 people at a party shake hands once with everyone else in the room. How many handshakes took place?

Options

This problem has only one correct answer

32
36
35
45

Correct Answer : D

Solution Description

Total number of handshakes= 10C2= 45. Hence, option (d) is correct.

5-Tut : Select Men?

Send Feedback

Find the number of ways in which we can select 2 men out of 11 men?

Options

This problem has only one correct answer

18
55
65
80

Correct Answer : B

Solution Description

Number of ways in which we select 2 men out of 11 men= 11C2= 55.

6-Tut : Ways To Answer?

Send Feedback

A student is to answer 10 out of 13 questions. In how many ways he can do this:

Options

This problem has only one correct answer

286
296

196
346

Correct Answer : A

Solution Description

Required number of ways= 13C10= 13!/(10! X 3!)= (13x12x11)/6= 286

7-Tut : Pick Balls?

Send Feedback

In how many ways can we pick any number of balls from a pack of three different balls?

Options

This problem has only one correct answer

2
7
8
None of These

Correct Answer : C

Solution Description

Required number of ways= 2^3=8

8-Tut : Pick Coins?

Send Feedback

Number of ways of selecting 5 coins from coins three each of Rs. 1, Rs. 2 and Rs. 5 if coins of the same denomination are alike, is:

Options

This problem has only one correct answer

20
30
9
16

Correct Answer : C

Solution Description

(1) Taking 3 coins of 1 Rs. :-

Case 1 -

(a) 2 coins of 2 Rs.

(b) 1 coin of 2 Rs and 1 coin of Rs 5.

(c) 2 coins of 5 Rs.

(2) Taking 3 coins of 2 Rs. :-

Case 2 -

(a) 2 coins of 1 Rs.

(b) 1 coin of 1 Rs and 1 coin of Rs 5.

(c) 2 coins of 5 Rs.

(3) Taking 3 coins of 5 Rs. :-

Case 3 - (a) 2 coins of 1 Rs.

(b) 2 coins of 2 Rs.

(c) 1 coin of 1 Rs and 1 coin of 2 Rs.

∴ A total number of ways =3+3+3=9.

9-Tut : Captain And VC

Send Feedback

If captain and vice-captain are in the team then in how many ways can we select a team of 10 players from a group of 15 players?

Options

This problem has only one correct answer

13C10
13C8
15C8
15C10

Correct Answer : B

Solution Description

If captain and vice-captain are already in the team then we need to select 8 players out of 13 players.

Required number of ways= 13C8

Hence, option (b) is correct.

10-Tut : Committee

Send Feedback

A committee of five members is to be formed out of 3 trainees, 4 professors and 6 research associates. In how many different ways this can be done if the committee should have all the 4 professors and 1 research associate or all 3 trainee and 2 professors?

Options

This problem has only one correct answer

15
18
25
12

Correct Answer : D

Solution Description

Total number of ways to select 4 professors and 1 research associate= 4C4x6C1=1×6=6.

Total number of ways to select 3 trainee and 2 professors= 3C3x4C2=6

Required answer= 6+ 6= 12.

11-Tut : Number Of Solutions

Send Feedback

Find the number of non-negative integer solutions of x+ y+ z= 10?

Options

This problem has only one correct answer

12
66
81
None Of These

Correct Answer : B

Solution Description

Number of non-negative integer solutions= (10+3-1)C(3-1)= 12C2= 66. Hence, option b is correct.

12-Tut : Number Of Positive Solutions

Send Feedback

Find the number of positive integer solutions of x+ y+ z= 10?

Options

This problem has only one correct answer

12
66
36
None Of These

Correct Answer : C

Solution Description

Number of positive integer solutions= (7+3-1)C(3-1)= 9C2= 36. Hence, option c is correct.

13-Tut : Ways To Arrange

Send Feedback

In how many different ways can the letter of the word ‘ARMOUR’ be arranged?

Options

This problem has only one correct answer

360
300
640
350

Correct Answer : A

Solution Description

There are 6 letters in ‘ARMOUR’. And two R's are same. Hence this can be arranged in 6!/2 ways or 720/2 = 360 ways.

14-Tut : Arrange Words

Send Feedback

In how many different ways can the letter of the word ‘ARROW’ be arranged?

Options

This problem has only one correct answer

60
40
50
None Of These

Correct Answer : A

Solution Description

Required number of letters= 5!/2!=60

Hence, option (a) is correct.

15-Tut : Arrange Prizes

Send Feedback

How many ways can 4 prizes be given away to 3 boys, if each boy is eligible for all the prizes?

Options

This problem has only one correct answer

12
64
81
None Of These

Correct Answer : C

Solution Description

Any one prize can be given to any one of the 3 boys and hence there are 3 ways of distributing each prize.

Hence, the 4 prizes can be distributed in 3^4 = 81 ways.

16-Tut : Arrange Rings

Send Feedback

Find out the number of ways in which 6 rings of different types can be worn in 3 fingers?

Options

This problem has only one correct answer

120
720
729
125

Correct Answer : C

Solution Description

Required number of ways= 3^6=729

17-Tut : Arrange Letters

Send Feedback

In how many ways can the letters of the word HIPPOPOTAMUS be arranged?

Options

This problem has only one correct answer

12!
12!/2!
12!/3!
12!/(2! x 3!)

Correct Answer : D

Solution Description

The words can be arranged in 12! Ways. There are 3 P's and 2 O's.

So, number of arrangements = 12!/(2! x 3!)

18-Tut : Letter Arranged

Send Feedback

In how many different ways can the letter of the word SOFTWARE be arranged in such a way that the vowels always come together?

Options

This problem has only one correct answer

13440
4320
1440
720

Correct Answer : B

Solution Description

There are total 3 vowels (O, A, E) in SOFTWARE.
These three vowels can be considered as a single letter. Now we have 6 letter which can be arranged in 6! Different ways and the 3 vowels can be arranged in 3! Ways.

Hence the required number of combinations= 3!×6!= 4320.

19-Tut : Form Integers

Send Feedback

How many three digit integers can be formed using the digits 0, 1, 2, 5, 8 and 9 (repetition of digits not allowed).

Options

This problem has only one correct answer

60
100
160
720

Correct Answer : B

Solution Description

Forming numbers without including zero
Total numbers formed = 5 × 4 × 3 = 60
Forming numbers including zero
Total numbers formed = 5 × 5 × 4 = 100

Required number of integers = 100 + 60 = 160

20-Tut : Number Of Integers

Send Feedback

What will be the number of integers formed in the previous question if repetition of digits is allowed?

Options

This problem has only one correct answer

305
180
125
None Of These

Correct Answer : B

Solution Description

21-Tut : Person Sit

Send Feedback

10 persons were invited to a party. In how many ways can they be seated in a round table such that two particular persons sit on either side of the host?

Options

This problem has only one correct answer

9!x2
9!
8!x2
8!

Correct Answer : C

Solution Description

After fixing the places of three persons (1 host + 2 persons) and treating them as 1 unit we can arrange the total (10 - 2 + 1) = 9 units in 8! ways. Again these particular persons can sit on either side of the host in 2 ways. Hence the total number of ways is 8! × 2.

22-Tut : Different Ways To Sit

Send Feedback

If 7 people are going to sit at a round table, but Kriti will not sit next to Heena, how many different ways can the group of 6 sit?

Options

This problem has only one correct answer

240
480
720
None Of These

Correct Answer : B

Solution Description

Total circular permutations = (7-1)! = 6! = 720.
Ways in which Kriti and Heena sit together = 2! × 5! = 2 × 120 = 240

Required ways = 720 - 240 = 480.