**Easy Worksheet on Permutation and Combination**

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| --- | --- |
| **1.** Evaluate **(i)**  **(ii)**  **(i)**  **(ii)**    | **2.** Simplify :   |
| **3.** Two colours are chosen from the colours red (R), yellow (Y), green (G) and blue (B) to be the colours of a logo. **(a)** List the possible combinations of two colours.1. How many combinations of two colours are available?

**(a)** RY RG RB YG YB GB**(b)** Combinations of two colours  | **4.** A Mark Six lottery ticket consists of marking 6 different numbers ranging from 1 to 49.**(a)** How many different lottery tickets can you mark?1. If each ticket costs $5, then how much do you pay for buying all lottery tickets in **(a)**?

**(a)** No.of different lottery tickets **(b)** Amount I pay  |
| **5.** A relay team of 4 persons is selected from a group of 9 runners. How many different teams can be formed if **(a)** an outstanding runner must be included in the team?1. a wounded runner must also be excluded from the team?

**(a)** Different teams can be formed **(b)** Different teams can be formed  | **6.** In how many ways can a group of 5 printers be selected from 6 inkjet and 9 laser printers if the group must contain**(a)** exactly 3 laser printers?1. at least 3 laser printers?

**(a)** No. of ways **(b)** No. of ways   |
| **7. (a)** Find the number of diagonals that can be drawn in an 4-sided polygon.* 1. Find the number of diagonals that can be drawn in an 5-sided polygon.

**(c)** Find the number of diagonals that can be drawn in an 6-sided polygon.**(d)** Try to generalize the above cases, find the number of diagonals that can be drawn in an n-sided polygon.**(a)** No. of diagonals = 2**(b)** No. of diagonals = 5**(c)** No. of diagonals = 9**(d)** No. of diagonals =   |
| **8.** In the Legislative Council, a special committee of 5 members has to be formed from 10 non-official members and 7 official members. In how many ways can the committee be formed if it consists of **(a)** 5 non-official members? **(b)** 3 non-official and 2 official members?(c) Non-official members in majority?**(a)** No. of ways can the committee be formed **(b)** No. of ways can the committee be formed **(c)** No. of ways can the committee be formed  |
| **9.** A poker hand of 5 cards are selected from a deck of 52 playing cards. How many different poker hands contain**(a)** all spades? **(b)** 3 Aces and 2 Kings? **(c)** 4 cards with identical number or letter?**(a)** No. of different poker hand = **(b)** No. of different poker hand = **(c)** No. of different poker hand =  |

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