

Review Test
Permutations, Combinations & Probability
Test 2

(20 Questions – 30 Minutes)

1. What is the total number of different permutations of all the letters in the word MARCH ?
a) 15 b) 120 c) 240 d) 60
2. What is the total number of different permutations of all the letters in the word SHOOTERS ?
a) 40320 b) 20160 c) 10080 d) 5040
3. 3 boys and 4 girls are to form a line. What is the number of ways in which they can be arranged if:
i) The first 2 are girls
a) 720 b) 5040 c) 1440 d) 144
ii) The boys stand together?
a) 720 b) 5040 c) 1440 d) 144
iii) No two boys stand next to each other?
a) 720 b) 5040 c) 1440 d) 144
4. Three lottery tickets are to be drawn at random from a bunch of 40 to award first, second and third prizes. If no contestant can win more than one prize, what is the total number of ways in which prizes can be awarded?
a) 9880 b) 59280 c) 19760 d) 39520
5. In how many ways can a caravan of 8 wagons be arranged in a circle?
a) 40320 b) 20160 c) 5040 d) 2520
6. How many numbers between 10 and 300 can be made from the digits 1, 2 & 3 if:
i) Each digit may only be used once
a) 10 b) 12 c) 24 d) 6
ii) Each digit may be used more than once
a) 18 b) 10 c) 12 d) 27
7. If a coin is flipped 5 times, what is the probability that exactly 3 heads will occur?
a) $1/32$ b) $5/32$ c) $5/16$ d) $1/16$
8. What is the probability of choosing from a group of 4 men and 5 women, a committee of 3 men and 2 women?
a) $20/63$ b) $1/126$ c) $2/63$ d) $10/63$

9. A coin is flipped thrice. What is the probability of getting atleast 2 heads?
a) $\frac{3}{8}$ b) $\frac{1}{4}$ c) $\frac{1}{2}$ d) $\frac{7}{8}$ e) $\frac{1}{8}$
10. A card is drawn at random from a pack of 52 cards. What is the probability that is either hearts or picture (Jack, King, Queen) card?
a) $\frac{11}{26}$ b) $\frac{1}{2}$ c) $\frac{8}{13}$ d) $\frac{11}{13}$ e) $\frac{14}{96}$
11. What is the probability of drawing a number card from a pack of 52 cards?
a) $\frac{3}{52}$ b) $\frac{9}{13}$ c) $\frac{4}{26}$ d) $\frac{1}{26}$ e) $\frac{5}{52}$
12. A bag contains 5 yellow, 4 red and 3 green marbles. Jack draws two marbles at random without replacement.
- i) What is the probability that none of the marbles are Red?
a) $\frac{1}{11}$ b) $\frac{2}{11}$ c) $\frac{5}{33}$ d) $\frac{14}{33}$
- ii) What is the probability that both are yellow?
a) $\frac{1}{11}$ b) $\frac{2}{11}$ c) $\frac{5}{33}$ d) $\frac{14}{33}$
- iii) What is the probability that one is Red and the other is Green?
a) $\frac{1}{11}$ b) $\frac{2}{11}$ c) $\frac{5}{33}$ d) $\frac{14}{33}$
13. There are 3 roads from Platsville to Ocean Heights and 4 roads from Ocean Heights to Bay Cove. Adil is driving from Platsville to Bay Cove through Ocean heights and back. How many possible routes can he take if:
- i) He does not use any road twice?
a) 72 b) 144 c) 36 d) 288
- ii) He can use a road twice?
a) 72 b) 144 c) 36 d) 288
14. There are a total of 8 teams in a cricket tournament. What is the total number of games that will be played if each team plays every other time thrice?
a) 40320 b) 5040 c) 28 d) 84 e) 56