

Math II C – Review Test
Permutations, Combinations & Probability
(21 Questions – 40 Minutes)

1. 3 boys and 4 girls are to form a line. What is the number of ways in which they can be arranged if:
 - i) There are no restrictions?
a) 720 b) 5040 c) 1440 d) 144
 - ii) The first is a boy and the last is a girl?
a) 720 b) 5040 c) 1440 d) 144
 - iii) No two girls stand next to each other?
a) 720 b) 5040 c) 1440 d) 144
2. A committee of 5 members is to be chosen from 7 boys and 4 girls. Find the number of ways in which this can be done if:
 - i) There are no restrictions
a) 462 b) 210 c) 441 d) 55440
 - ii) The committee has exactly 3 boys
a) 462 b) 210 c) 441 d) 55440
 - iii) The committee has atleast one girl
a) 462 b) 210 c) 441 d) 55440
3. In how many ways can 5 people be seated around a round table?
a) 120 b) 12 c) 24 d) 60
4. A jeweler has a choice of 8 jewels of which he needs to put 4 around a bracelet. How many different arrangements can he possibly prepare?
a) 210 b) 24 c) 420 d) 5040 e) 2520
5. Find the ways in which six teachers of mathematics can be assigned to 4 sections of an introductory math course if no teacher is assigned to more than one section?
a) 15 b) 24 c) 360 d) 720
6. How many 3 digit numbers can be formed from the digits 0, 1, 2, 3, 4, 5 & 6 if:
 - i) Each digit can only be used once?
a) 210 b) 180 c) 35 d) 6
 - ii) The number formed is odd and no digit can be used more than once?
a) 75 b) 105 c) 126 d) 108

7. A coin is flipped thrice. What is the probability of getting atleast 1 head?
(a) $3/8$ (b) $1/4$ (c) $1/2$ (d) $7/8$ (e) $1/8$
8. A card is drawn at random from a pack of 52 cards. What is the probability that it is either red or picture (Jack, King, Queen) card?
(a) $19/26$ (b) $1/2$ (c) $8/13$ (d) $11/13$ (e) $14/96$
9. The probability that it will rain on a given day is $3/7$. The probability that a football match will be played any given day is $1/2$. What is the probability that, on a randomly picked day, people will be able to enjoy a sunny day of football?
(a) $3/14$ (b) $2/7$ (c) $3/7$ (d) $1/7$ (e) $5/7$
10. Which of the following is larger?
a) The probability of 7 heads in 10 coin tosses
b) The probability of 3 heads in 10 coin tosses
i. a
ii. b
iii. Both are equal
iv. Data is insufficient to answer
11. What is the probability of drawing a Red picture (King, Queen, Jack) from a pack of 52 cards?
(a) $3/52$ (b) $3/26$ (c) $4/26$ (d) $1/26$ (e) $5/52$
12. A bag contains 5 yellow, 4 red and 3 green marbles. Jack draws two marbles at random without replacement. What is the probability that none of the marbles are green?
(a) $8/11$ (b) $1/4$ (c) $6/11$ (d) $9/16$ (e) $5/11$
13. How many different 5-member teams can be chosen from a group of 8 people?
(a) 120 (b) 56 (c) 25 (d) 40 (e) 24
14. What is the probability of randomly choosing from a group of 3 men and 4 women, a team of 2 men and 1 woman?
(a) $3/7$ (b) $4/7$ (c) $12/35$ (d) $3/35$ (e) $4/35$
15. Julian has forgotten the last 2 digits of her friend's phone number, but she is sure that neither of the last 2 digits are 9. What is the probability that if she randomly dials a phone number, she will be able to connect to her friend?
(a) $1/9$ (b) $1/81$ (c) $1/72$ (d) $1/2$ (e) $1/26$