

# GMAT Prep

## PnC and Probability



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1. In how many ways can we select 2 boys and 3 girls from a group of 5 boys and 6 girls?



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2. In how many ways can we select 2 boys and 3 girls from a group of 5 boys and 6 girls, such that John who is one of the boys will be selected and Maham who is one of the girls must not be selected?



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3. In how many ways can you make 5 people stand in a straight line such that Kieth who is a part of the group always stands in the middle of the line?



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4. In how many different ways 3 children can be sent to any of the 5 classrooms, such that any classroom can be left empty?



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5. How many different 3-digit positive even numbers can be formed without repeating the digits?

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6. In how many ways can the University XYZ give 3 scholarships, one each of \$30,000, \$20,000, and \$10,000 to 3 different applicants from a pool of 12 applicants?



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7. How many arrangements of the word VIBGYOR are possible such that 'O' is in the middle but 'I' is not next to 'O'?

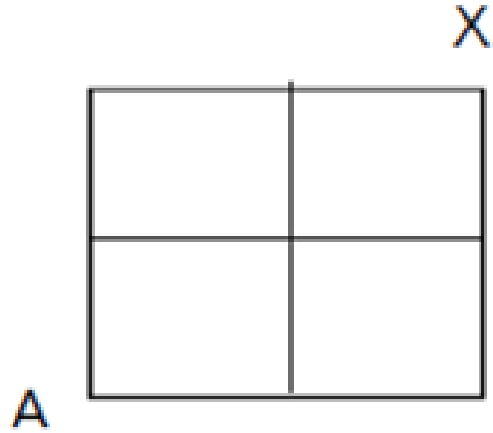
# PnC and Probability

8. How many different ways to arrange all the letters of the word "MIRACLE" such that all the vowels are not together?



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9.



In the figure above, how many paths are there from A to X if the only ways to move are up and right?

- A. 4
- B. 5
- C. 6
- D. 8
- E. 9

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10. A history exam features five questions. Three of the questions are multiple-choice with four options each. The other two questions are true or false. If Caroline selects one answer for every question, how many different ways can she answer the exam?



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11. In how many ways can you arrange Alice, Beth, Clan, and Dony in a line so that Clan is on the left of Beth?



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12. In a team meeting of 12 members, how many handshakes are exchanged if each member shakes hands exactly once with each of the other members in the room?
- A. 12
  - B. 22
  - C. 66
  - D. 132
  - E. 244



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13. A palindrome number is a number (such as 16461) that remains the same when its digits are reversed. If a number is selected from a positive five-digit number, what is the probability that the number selected is a palindrome?



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14. If three coins are flipped, what is the probability of getting no heads?





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15. If five dice are rolled, what is the probability of getting exactly two six?



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16. A bag consists of three differently colored bottles, which include 3 black, 4 white, and 5 red. If 2 bottles are picked randomly from the bag, what is the probability that:

(i) Both the bottles selected are Red

(ii) Both the bottles selected are not Red

(iii) None of the bottles selected is Red

(iv) One is red and the other is Black

(v) The first bottle selected is red and the second one is black.



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17. A room has 3 lamp sockets. From a collection of 15 bulbs, of which 10 are defective, 3 bulbs are chosen at random and put into sockets. What is the probability that the room is lit.



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18.  $n$  questions are to be marked either true or false. What is the minimum value of  $n$  for which the probability of all being true is less than  $\frac{1}{1000}$  ?



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19.  $-9, -7, -5, -3, -1, 0, 1, 2, 3, 4, 5$

If two integers are randomly selected from the given list of numbers, what is the probability that the product of the two integers selected will be positive?



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20. From a bag containing 5 different pairs of socks, 2 socks are selected at random, what is the probability that the 2 socks selected are from the same pair?





*Thank you*