



MATHS

BOOKS - ARIHANT SSC MATHS (HINGLISH)

PROBABILITY

Examples

1. There are 5 marbles in a bag. 3 of them are red and 2 of them are blue. What is the

probability that a blue marble will be picked?



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2. A teacher chooses a student at random from a class of 30 boys. What is the probability that the student chosen is a boy?



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3. A bag contains 20 black marbles, if a marble is picked at random from the bag. Find the

probability that marble picked is of Red colour.



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4. A single card is chosen at random from a standard deck of 52 playing cards. What is the probability of choosing a card that is not a king?



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5. A card is chosen at random from a standard deck of 52 playing cards. Without replacing it, a second card is chosen. What is the probability that the first card chosen is a queen and the second card chosen is a jack?



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6. A coin is tossed and a single 6-sided die is rolled. Find the probability of getting the head side of the coin and getting a 3 on the die.



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7. From a well - shuffled pack of cards, a card is drawn at random. Find the probability of its being either a queen or a heart.



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8. Eight persons A, B, C, D, E, F, G and H appeared for an inter view. Find the probability that both A and D are selected in the interview?



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9. A teacher gave her students two tests. If 45% of the students passed both tests and 60% passed the first test, what is the probability that a student who passed the first test also passed the second? Round your answer to the nearest percent.



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10. What is the probability of each outcome, when a coin is tossed?



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11. A coin is tossed twice, then find the probability that a head is obtained atleast once.



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12. A single 6-sided die is rolled. What is the probability of getting an even number and getting an odd number?



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13. A single 6-sided die is rolled. What is the probability of getting a 2 or a 5?



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14. A total of five cards are chosen at random from a standard deck of 52 playing cards. What is the probability of choosing 5 aces?



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15. A single card is chosen at random from a standard deck of 52 playing cards. What is the probability of choosing a king or a club?



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16. A glass jar contains 1 red, 3 green, 2 blue and 4 yellow marbles. If a single marble is chosen at random from the jar, what is the probability that it is yellow or green?



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17. A person has 2 bags. He has 3 black and 4 white balls in one bag and 4 black and 3 white balls in another bag. Find the probability of getting a black ball.



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18. In a Mathematics class of 30 students, 17 are boys and 13 are girls. On a unit test, 4 boys and 5 girls made an A grade. If a student is chosen at random from the class, what is the

probability of choosing a girl or an 'A grade student'?



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19. A man can hit a target once in 4 shots. if he fires 4 shot in succession what is probability, atleast he will hit target once.



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20. The probability that it is Friday and a student is absent, is 0.03. Since, there are 5 school days in a week, the probability that it is Friday is 0.2. What is the probability that a student is absent, given that today is Friday?



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Base Level Questions

1. What is the probability that a card drawn at random from a pack of 52 cards is either a king

or a spade?

A. $\frac{17}{52}$

B. $\frac{4}{13}$

C. $\frac{3}{13}$

D. $\frac{13}{52}$

Answer: B



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2. A card is drawn from a well-shuffled pck of cards. The probability of getting a queen of club

or a king of heart is

A. $\frac{1}{52}$

B. $\frac{1}{26}$

C. $\frac{1}{13}$

D. $\frac{1}{39}$

Answer: B



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3. A card is drawn at random from a well shuffled pack of 52 cards. Find the probability

that the card drawn is neither a red card nor a queen.

A. $1/13$

B. $7/13$

C. $10/13$

D. None of these

Answer: B



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4. A single letter is selected at random from the word PROBABILITY , the probability that it is a vowel is

A. $\frac{3}{11}$

B. $\frac{4}{11}$

C. $\frac{2}{11}$

D. 0

Answer: B



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5. What is the probability that a leap year selected at random contains 53 Sundays is

A. $\frac{7}{366}$

B. $\frac{26}{183}$

C. $\frac{1}{7}$

D. $\frac{2}{7}$

Answer: D



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6. The probability of drawing a red card from a deck of playing cards is

A. $\frac{2}{18}$

B. $\frac{1}{3}$

C. $\frac{1}{4}$

D. $\frac{1}{2}$

Answer: D



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7. If a die is thrown, then find the probability of getting a composite number on the upper face.

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. 1

Answer: B



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8. Three unbiased coins are tossed simultaneously. Find the probability of getting (i) exactly two heads, (ii) at least two heads, (iii) at most 2 heads.

A. $1/8$

B. $2/8$

C. $3/8$

D. $4/8$

Answer: C



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9. Let E be the set of all integers with 1 at their unit places. The probability that a number chosen from $\{2, 3, 4, \dots, 50\}$ is an element of E, is

A. $\frac{5}{49}$

B. $\frac{4}{49}$

C. $\frac{3}{49}$

D. $\frac{2}{49}$

Answer: B



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10. When two dice are rolled, what is the probability that the sum of the numbers appeared on them is 11?

A. $\frac{1}{6}$

B. $\frac{1}{18}$

C. $\frac{1}{9}$

D. 1

Answer: B



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11. A committee of 3 members is to be selected out of 3 men and 2 women. What is the probability that the committee has at least 1 woman? $\frac{1}{10}$ (b) $\frac{9}{20}$ (c) $\frac{1}{20}$ (d) $\frac{9}{10}$ (e) None of these

A. $\frac{1}{10}$

B. $\frac{9}{20}$

C. $\frac{9}{10}$

D. $\frac{1}{20}$

Answer: C



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12. A basket contains three blue and four red balls. If three balls are drawn at random from the basket, what is the probability that all the three balls are either blue or red?

A. 1

B. $\frac{1}{7}$

C. $\frac{3}{14}$

D. $\frac{3}{26}$

Answer: B



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13. An urn contains 3 red and 4 green marbles. If three marbles are picked at random, what is the probability that two are green and one is red?

A. $\frac{3}{7}$

B. $\frac{18}{35}$

C. $\frac{5}{14}$

D. $\frac{4}{21}$

Answer: B



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14. A number is selected at random from the set $\{1, 2, 3, \dots, 50\}$. The probability that it is a prime, is

A. 0.1

B. 0.2

C. 0.3

D. 0.7

Answer: C



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15. A basket contains 4 red , 5 blue and 3 green marbles .

If two marbles are picked at random , what is the probability that both are red ?

A. $\frac{3}{7}$

B. $\frac{1}{2}$

C. $\frac{2}{11}$

D. None of the above

Answer: D



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16. A basket contains 4 red , 5 blue and 3 green marbles .

If three marbles are picked at random , what is the probability that at least one is blue ?

A. $\frac{7}{12}$

B. $\frac{37}{44}$

C. $\frac{5}{12}$

D. $\frac{7}{44}$

Answer: B



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17. A basket contains 4 red , 5 blue and 3 green marbles .

If three marbles are picked at random, what is

the probability that either all are green or all red ?

A. $\frac{7}{44}$

B. $\frac{7}{12}$

C. $\frac{5}{12}$

D. $\frac{1}{44}$

Answer: D



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18. A basket contains 3 blue, 2 green and 5 red balls.

If three balls are picked at random, what is the probability that atleast one is red?

A. $\frac{1}{2}$

B. $\frac{7}{12}$

C. $\frac{11}{12}$

D. $\frac{1}{5}$

Answer: C



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19. A bag contains 3 blue, 2 green and 5 red balls. If four balls are picked at random, what is the probability that two are green and two are blue? $\frac{1}{18}$ (b) $\frac{1}{70}$ (c) $\frac{3}{5}$ (d) $\frac{1}{2}$

A. $\frac{1}{18}$

B. $\frac{1}{70}$

C. $\frac{3}{5}$

D. $\frac{1}{2}$

Answer: B



20. Three mangoes and three apples are kept in a box. If two fruits are chosen at random, find the probability that one is a mango and the other is an apple.

A. $\frac{2}{3}$

B. $\frac{3}{5}$

C. $\frac{1}{3}$

D. $\frac{1}{5}$

Answer: B



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21. The probability that a man will be alive for 10 more years is $\frac{1}{4}$ and the probability that his wife will be alive for 10 more years is $\frac{1}{3}$. The probability that none of them will be alive for 10 more years, is

A. $\frac{5}{12}$

B. $\frac{1}{2}$

C. $\frac{7}{12}$

D. $\frac{11}{12}$

Answer: B



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22. In a lottery 10000 tickets are sold and ten equal prizes are awarded. What is the probability of not getting a prize, if you buy one ticket?

A. $9/10000$

B. $9/10$

C. $999/1000$

D. $9999/10000$

Answer: C



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23. Two person A and B appear in an interview for two vacancies. If the probalities of their sections are $\frac{1}{4}$ and $\frac{1}{6}$, respectively, then the probability that none of them is selected is

A. $\frac{5}{8}$

B. $\frac{5}{12}$

C. $\frac{1}{12}$

D. $\frac{1}{24}$

Answer: A



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24. The probabilities of solving a problem by three students A,B and C are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$

respectively. The probability that the problem will be solved, is

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{3}{4}$

D. $\frac{1}{3}$

Answer: C



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25. Out of 13 applicants for a job, there are 5 women and 8 men. It is desired to select 2 persons for the job. The probability that at least one of the selected persons will be a woman is

A. $\frac{25}{39}$

B. $\frac{14}{35}$

C. $\frac{5}{13}$

D. $\frac{10}{13}$

Answer: A



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26. Five coins are tossed at a time. Then, the probability of obtaining atleast one tail is

A. $\frac{31}{32}$

B. $\frac{1}{32}$

C. $\frac{1}{5}$

D. $\frac{5}{32}$

Answer: A



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27. An urn contains 6 red, 4 blue, 2 green and 3 yellow marbles

If two marbles are picked at random, what is the probability that both are red?

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{2}{15}$

D. None of the above

Answer: D



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28. An urn contains 6 red, 4 blue, 2 green and 3 yellow marbles

If three marbles are picked at random, what is the probability that two are blue and one is yellow?

A. $\frac{3}{91}$

B. $\frac{1}{5}$

C. $\frac{18}{455}$

D. $\frac{7}{15}$

Answer: C



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29. An urn contains 6 red, 4 blue, 2 green and 3 yellow marbles

If four marbles are picked at random, what is the probability that at least one is blue?

A. $\frac{4}{15}$

B. $\frac{69}{91}$

C. $\frac{11}{15}$

D. $\frac{22}{91}$

Answer: B



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30. An urn contains 6 red, 4 blue, 2 green and 3 yellow marbles.

If two marbles are picked at random, what is the probability that either both are green or both are yellow?

A. $\frac{5}{91}$

B. $\frac{1}{35}$

C. $\frac{1}{3}$

D. $\frac{4}{105}$

Answer: D



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31. An urn contains 6 red, 4 blue, 2 green and 3 yellow marbles

If four marbles are picked at random, what is

the probability that one is green , two are blue
and one is red ?

A. $\frac{24}{455}$

B. $\frac{13}{35}$

C. $\frac{11}{15}$

D. $\frac{7}{91}$

Answer: A



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32. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap.

if two caps are picked at random, what is the probability that both are blue?

A. $\frac{1}{6}$

B. $\frac{1}{10}$

C. $\frac{1}{12}$

D. None of the above

Answer: D



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33. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap.

If four caps are picked at random, what is the probability that none is green?

A. $\frac{7}{99}$

B. $\frac{5}{99}$

C. $\frac{7}{12}$

D. $\frac{5}{12}$

Answer: A



34. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap.

If three caps are picked at random, what is the probability that two are red and one is green?

A. $\frac{9}{22}$

B. $\frac{6}{19}$

C. $\frac{1}{6}$

D. $\frac{3}{22}$

Answer: D



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35. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap.

If one cap is picked at random, what is the probability that it is either blue or yellow ?

A. $\frac{2}{9}$

B. $\frac{1}{4}$

C. $\frac{3}{8}$

D. $\frac{6}{11}$

Answer: B



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36. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap.

If two caps are picked at random, what is the probability that atleast one is red ?

A. $\frac{1}{3}$

B. $\frac{16}{21}$

C. $\frac{19}{33}$

D. $\frac{7}{19}$

Answer: C



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37. A and B are two events such that $P(A) = 0.3$ and $P(A \cup B) = 0.8$. If A and B are independent, then P (B) is

A. $\frac{2}{3}$

B. $\frac{3}{8}$

C. $\frac{2}{7}$

D. None of the above

Answer: D



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38. A box contains 24 marbles, some are green and others are blue, if a marble is drawn at random from the box, the probability that it is green is $\frac{2}{3}$. The number of blue balls in the box is

A. a. 13

B. b. 12

C. c. 16

D. d. 0.08

Answer: D



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39. From 4 children, 2 women and 4 men , 4 persons are selected. The probability that there

are exactly 2 children among the selected persons, is

A. $\frac{11}{21}$

B. $\frac{9}{21}$

C. $\frac{10}{21}$

D. $\frac{5}{21}$

Answer: B



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40. There are two bags containing white and black balls. In the first bag, there are 8 white and 6 black balls and in the second bag, there are 4 white and 7 black balls. One ball is drawn at random from any of these two bags. Find the probability of this ball being black.

A. $\frac{5}{9}$

B. $\frac{7}{19}$

C. $\frac{41}{77}$

D. $\frac{9}{17}$

Answer: C



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41. A bag contains 3 red, 4 white and 7 black balls. The probability of drawing a red or a black ball is

A. $\frac{4}{7}$

B. $\frac{1}{7}$

C. $\frac{6}{7}$

D. 3.7

Answer: C



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Higher Skill Level Questions

1. The probability that a man can hit a target is $\frac{3}{4}$. He tries 5 times. The probability that he will hit the target atleast three times, is

A. $\frac{291}{364}$

B. $\frac{371}{464}$

C. $\frac{471}{502}$

D. $\frac{459}{512}$

Answer: D



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2. A dice is rolled three times and sum of three numbers appearing on the uppermost face is 15.

The chance that the first roll was four is

A. $\frac{2}{5}$

B. $\frac{1}{5}$

C. 1 / 6

D. None of these

Answer: D



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3. In a ward-robe, Nitish has 3 trousers. One of them is black, second is blue and third brown. In this wardrobe, he has 4 shirts also. One of them is black and the other 3 are white. He opens his ward-robe in the dark and picks out one shirt-

trouser pair without examining the colour. What is the likelihood that neither the shirts nor the trousers are black?

A. a. $\frac{1}{12}$

B. b. $\frac{1}{6}$

C. c. $\frac{1}{4}$

D. d. $\frac{1}{2}$

Answer: D



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4. Murari has 9 pairs of dark blue socks and 9 pairs of black socks. He keeps them all in the same bag. If he picks out three socks at random, what is the probability that he will get a matching pair?

A. $\frac{{}^9C_3 \times {}^9C_1}{{}^{18}C_3}$

B. $\frac{2 \times {}^9C_3 \times {}^9C_1}{{}^{18}C_3}$

C. 1

D. $\frac{4}{7}$

Answer: C



5. An anti-aircraft gun can take a maximum of four shots at an enemy plane moving away from it. The probability of hitting the plane at the first, second, third and fourth shots are 0.4, 0.3, 0.2 and 0.1, respectively, What is the probability that the plane is hit when all the four shots are fired? (A) 0.4379 (B) 0.6872 (C) 0.6976 (D) 0.3507

A. 0.4379

B. 0.6872

C. 0.6976

D. 0.3507

Answer: C



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6. Four boys and three girls stand in queue for an interview. The probability that they stand in alternate position, is

A. $\frac{1}{34}$

B. $\frac{1}{35}$

C. $\frac{1}{17}$

D. $\frac{1}{68}$

Answer: B



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7. Five boys and five girls are sitting in a row.

Find the probability that

All the girls are sitting together.

A. $\frac{1}{42}$

B. $\frac{41}{42}$

C. $\frac{3}{35}$

D. $\frac{1}{42}$

Answer: A



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8. Five boys and five girls are sitting in a row.

Find the probability that

All the boys are sitting together.

A. $\frac{3}{42}$

B. $\frac{41}{42}$

C. $\frac{3}{35}$

D. $\frac{1}{42}$

Answer: D



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9. Five boys and five girls are sitting in a row.

Find the probability that

All the girls are sitting together.

A. $\frac{41}{42}$

B. $\frac{39}{42}$

C. $\frac{31}{42}$

D. $\frac{31}{35}$

Answer: A



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10. Five boys and five girls are sitting in a row.

Find the probability that

All the boys are sitting together.

A. $\frac{3}{35}$

B. $\frac{43}{49}$

C. $\frac{41}{42}$

D. $\frac{1}{42}$

Answer: C



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11. An elevator starts with 5 passengers and stops at 8 different floors of the house. Find out the probability of all the 5 passengers alighting at different floors.

A. a. $\frac{101}{512}$

B. b. $\frac{105}{512}$

C. c. $\frac{107}{512}$

D. d. $\frac{109}{512}$

Answer: B



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12. If a 4-digit number is formed at random using the digits 1,3,5,7 and 9 without repetition, then the probability that it is divisible by 5, is

A. $\frac{4}{5}$

B. $\frac{3}{5}$

C. $\frac{1}{5}$

D. $\frac{2}{3}$

Answer: C



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Example

1. An urn contains 6 red and 9 blue two balls are drawn from urn one after another without replacement .

Find the probability of drawing a red ball when a blue ball has been drawn from the urn .



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2. A pair of dice is thrown simultaneously , find the probabaility that the sum is obtained 9 when there is an odd number on the first dice .



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3. Let A and B be the two events such that $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$,

find

$$P\left(\frac{A}{B}\right)$$



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4. Let A and B be the two events such that $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$,

find

$$P\left(\frac{B}{A}\right)$$



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5. Let A and B be the two events such that

$$P(A) = \frac{1}{2}, P(B) = \frac{1}{3} \text{ and } P(A \cap B) = \frac{1}{4},$$

find

$$P(A \cup B)$$



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6. Let A and B be the two events such that

$$p(A) = \frac{1}{2}, P(B) = \frac{1}{3} \text{ and } P(A \cap B) = \frac{1}{4},$$

find

$$P\left(\frac{\bar{A}}{\bar{B}}\right)$$



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7. An urn contains 6 red balls and 9 green balls two balls are drawn in succession without replacement what is the probability that first is red and second is green .



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8. A coin is tossed twice and all 4 outcomes are equally likely .Let A be the event that first throw results in a head and B be the event that second throw results in a tail , then show that the events A and B are independent .

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9. A bag contains 10 red balls and 10 green balls , Two balls are drawn at random , one at a time ,

with replacement . Let A be the event that first ball is red , B be the event that second ball is green and C be the event that both balls are either red or green then show that the events A , B and C are pair wise independent and A , B , C are mutually dependent .



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10. (for explanation of law of total probability)
there are two bags . The first bag contains 4 white and 5 black balls and the second bag contains 5 white and 4 black balls , two balls are

drawn at random from the first bag and are put into the second bag without noticing their colours , then two balls are drawn from the second bag . find the probability that the balls are white and black.



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11. (for explanation of Baye's rule) three boxes contain 6 red , 4 black , 5 red , 5 black and 4 red , 6 black balls respectively one of the box is selected at random and a ball is drawn from it .

If the ball drawn is red , find probability that it is drawn from the first bag .



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Introductory Exercise 20 1

1. Find the probability of getting a head in a throw of a coin .

A. $\frac{1}{2}$

B. 1

C. 2

D. none of these

Answer: A



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2. two fair coins are tossed simultaneously . Find the probability of Getting only one head .

A. $1/2$

B. $1/3$

C. $\frac{2}{3}$

D. $\frac{3}{4}$

Answer: A



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3. two fair coins are tossed simultaneously . Find the probability of getting atleast one head .

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{1}{2}$

D. $\frac{3}{8}$

Answer: B



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4. two fair coins are tossed simultaneously .

Find the probability of

getting two heads .

A. $\frac{2}{7}$

B. $\frac{1}{4}$

C. $\frac{1}{2}$

D. $\frac{4}{5}$

Answer: B



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5. two fair coins are tossed simultaneously . Find the probability of getting atleast two heads :

A. $\frac{3}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. 1

Answer: C



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6. three fair coins are tossed simultaneously .

Find the propability of

getting one head .

A. 0

B. $\frac{3}{8}$

C. $\frac{5}{8}$

D. $\frac{3}{8}$

Answer: D



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7. three fair coins are tossed simultaneously .

Find the propability of

getting one tail .

A. 1

B. $\frac{1}{4}$

C. $\frac{5}{8}$

D. $\frac{3}{8}$

Answer: D



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8. three fair coins are tossed simultaneously .

Find the propability of

getting atleast one head .

A. $\frac{7}{8}$

B. $\frac{1}{8}$

C. $\frac{3}{4}$

D. $\frac{1}{4}$

Answer: A



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9. three fair coins are tossed simultaneously .

Find the propability of

getting two heads .

A. $\frac{3}{5}$

B. $\frac{3}{8}$

C. $\frac{5}{8}$

D. $\frac{2}{5}$

Answer: B



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10. three fair coins are tossed simultaneously .

Find the propability of

getting atleast two heads .

A. $\frac{3}{8}$

B. $\frac{7}{8}$

C. $\frac{1}{2}$

D. $\frac{1}{4}$

Answer: C



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11. three fair coins are tossed simultaneously .

Find the propability of

getting atleast one head and one tail .

A. $\frac{2}{8}$

B. $\frac{1}{2}$

C. $\frac{3}{10}$

D. $\frac{3}{4}$

Answer: D



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12. three fair coins are tossed simultaneously .

Find the propability of

getting more heads than the number of tails.

A. 2

B. $\frac{7}{8}$

C. $\frac{5}{8}$

D. $\frac{1}{2}$

Answer: D



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13. An unbiased die is rolled find the probability of getting a number less than 7 but greater than zero .

A. 0

B. 43894

C. 1

D. $\frac{7}{8}$

Answer: C



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14. An unbiased die is rolled find the probability of
getting a multiple of 3.

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{5}{6}$

D. none of these

Answer: B



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15. An unbiased die is rolled find the probability of getting a prime number.

A. $\frac{1}{2}$

B. $\frac{3}{5}$

C. $\frac{5}{7}$

D. $\frac{5}{8}$

Answer: A



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16. An unbiased die is rolled find the probability of getting an even number .

A. $\frac{1}{2}$

B. $\frac{4}{5}$

C. $\frac{2}{8}$

D. $\frac{3}{4}$

Answer: A



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17. A coin is tossed successively three times .

Find the propability of

getting exactly one heads or 2 heads

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{1}{2}$

D. $\frac{3}{8}$

Answer: B



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18. A coin is tossed successively three times .

Find the propability of

getting no heads .

A. 0

B. 1

C. $\frac{1}{8}$

D. $\frac{7}{8}$

Answer: C



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19. Two dice are rolled simultaneously . Find the probability of getting a total sum of 9 .

A. $\frac{1}{3}$

B. $\frac{1}{9}$

C. $\frac{8}{9}$

D. $\frac{9}{10}$

Answer: B



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20. Two dice are rolled simultaneously . Find the probability of getting a total of 9 or 11 .

A. $\frac{2}{99}$

B. $\frac{20}{99}$

C. $\frac{1}{6}$

D. $\frac{1}{10}$

Answer: C



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21. Two dice are rolled simultaneously . Find the probability of getting a total of 10 or 11 or 12

A. $\frac{2}{99}$

B. $\frac{20}{99}$

C. $\frac{1}{6}$

D. $\frac{1}{10}$

Answer: C



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22. Two dice are rolled simultaneously . Find the probability of getting a doublet .

A. $1/12$

B. 0

C. $\frac{5}{8}$

D. $\frac{1}{6}$

Answer: D



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23. Two dice are rolled simultaneously . Find the probability of getting a doublet of even numbers .

A. $\frac{5}{8}$

B. $1/12$

C. $3/4$

D. $1/4$

Answer: B



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24. Two dice are rolled simultaneously . Find the probability of getting a multiple of 2 one die and a multiple of 3 on the other .

A. $\frac{15}{36}$

B. $\frac{25}{36}$

C. $\frac{11}{36}$

D. $\frac{5}{6}$

Answer: C



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25. Two dice are rolled simultaneously . Find the probability of

getting the sum of numbers on the faces
divisible by 3 or 4.

A. $\frac{4}{9}$

B. $\frac{1}{7}$

C. $\frac{5}{9}$

D. $\frac{7}{12}$

Answer: C



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26. Two dice are rolled simultaneously . Find the probability of

Getting the sum as a prime number .

A. $\frac{3}{5}$

B. $\frac{5}{12}$

C. $\frac{1}{2}$

D. $\frac{3}{4}$

Answer: B



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27. Two dice are rolled simultaneously . Find the probability of getting atleast one '5'.

A. $\frac{3}{5}$

B. $\frac{1}{5}$

C. $\frac{5}{36}$

D. $\frac{11}{36}$

Answer: D



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28. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is black .

A. $\frac{1}{2}$

B. $\frac{1}{4}$

C. $\frac{8}{13}$

D. can't be determine

Answer: A



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29. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is a queen .

A. $\frac{1}{12}$

B. $\frac{1}{13}$

C. $\frac{1}{4}$

D. $\frac{3}{4}$

Answer: B



30. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is black and a queen .

A. $\frac{1}{13}$

B. $\frac{1}{52}$

C. $\frac{1}{26}$

D. $\frac{5}{6}$

Answer: C



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31. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is either black or a queen .

A. $\frac{15}{26}$

B. $\frac{13}{17}$

C. $\frac{7}{13}$

D. $\frac{15}{26}$

Answer: C



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32. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is either king or a queen .

A. $\frac{5}{26}$

B. $\frac{1}{13}$

C. $\frac{2}{13}$

D. $\frac{12}{13}$

Answer: C



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33. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is either a heart , a queen or a king .

A. $\frac{17}{52}$

B. $\frac{21}{52}$

C. $\frac{19}{52}$

D. $\frac{9}{26}$

Answer: C



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34. One card is drawn from a pack of 52 cards ,
each of the 52 cards being equally likely to be

drawn. Find the probability that

the card drawn is neither a spade nor a king

A. 0

B. $\frac{9}{13}$

C. $\frac{1}{2}$

D. $\frac{4}{13}$

Answer: B



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35. One card is drawn from a pack of 52 cards , each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is neither an ace nor a king .

A. $\frac{11}{13}$

B. $\frac{1}{2}$

C. $\frac{2}{13}$

D. $\frac{11}{26}$

Answer: A



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36. From a well shuffled pack of 52 cards three cards are drawn at random . Find the probability of drawing an ace a king and a jaack .

A. $\frac{16}{5525}$

B. $\frac{16}{625}$

C. $\frac{16}{3125}$

D. none of these

Answer: A



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37. Four cards are drawn at random from a pack of 52 cards find the probability of getting all the four cards of same number .

A. $\frac{17}{1665}$

B. $\frac{1}{20825}$

C. $\frac{7}{25850}$

D. none of these

Answer: B



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38. From a well shuffled pack of 52 playing cards , four cards are accidentally dropped . Find the probability that one card is missing from each suit .

A. $\frac{17}{20825}$

B. $\frac{2197}{20825}$

C. $\frac{197}{1665}$

D. none of these

Answer: B



39. Four cards are drawn at random from a pack of 52 cards find the probability of getting all the four cards of different numbers .

A. $\frac{141}{4165}$

B. $\frac{117}{833}$

C. $\frac{264}{4165}$

D. none of these

Answer: C



40. Four dice are thrown simultaneously . Find the probability that :

All of them show the same face .

A. $\frac{1}{216}$

B. $\frac{15}{16}$

C. $\frac{15}{36}$

D. $\frac{1}{2}$

Answer: A



41. Four dice are thrown simultaneously . Find the probability that :

All of them show the different face .

A. $\frac{1}{216}$

B. $\frac{5}{18}$

C. $\frac{15}{36}$

D. $\frac{11}{36}$

Answer: B



42. Four dice are thrown simultaneously . Find the probability that :

two of them show the same face and remaining two show the different the faces .

A. $\frac{4}{9}$

B. $\frac{5}{9}$

C. $\frac{11}{18}$

D. $\frac{7}{9}$

Answer: B



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43. Four dice are thrown simultaneously . Find the probability that :

Atleast two of them show the same face .

A. $\frac{37}{72}$

B. $\frac{11}{36}$

C. $\frac{47}{72}$

D. $\frac{25}{36}$

Answer: C



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44. what is the probability that a number selected from the numbers 1,2,3,...,20 , is a prime number when each of the given numbers is equally likely to be selected ?

A. $7/10$

B. $2/15$

C. $2/5$

D. $\frac{3}{5}$

Answer: C



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45. Tickets are numbered from 1 to 18 are mixed up together and then 9 ticket is drawn at random . Find the probability that the ticket has a number , which is a multiple of 2 or 3 .

A. $\frac{1}{3}$

B. $\frac{3}{5}$

C. $\frac{2}{3}$

D. $\frac{5}{6}$

Answer: C



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46. In a lottery of 100 tickets numbered 1 to 100 two tickets are drawn simultaneously . Find the probabiltly that both the ticktets drawn have prime numbers.

A. $\frac{2}{33}$

B. $\frac{7}{50}$

C. $\frac{7}{20}$

D. $\frac{5}{66}$

Answer: A



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47. In a lottery of 100 tickets numbered 1 to 100 two tickets are drawn simultaneously , find the probability that none of the tickets drawn has a prime number .

A. $\frac{29}{66}$

B. $\frac{17}{33}$

C. $\frac{37}{66}$

D. $\frac{17}{50}$

Answer: C



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48. Find the probability that a leap year selected at random will contain 53 sundays .

A. $\frac{5}{7}$

B. $\frac{3}{4}$

C. $\frac{4}{7}$

D. $\frac{2}{7}$

Answer: D



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49. A bag contains 8 red and 4 green balls . Find the probability that

the ball drawn is red when one ball is selected at random .

A. $\frac{2}{3}$

B. $\frac{1}{3}$

C. $\frac{1}{6}$

D. $\frac{5}{6}$

Answer: A



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50. A bag contains 8 red and 4 green balls . Find the probability that all the 4 balls drawn are red when four balls are drawn at random .

A. $\frac{17}{32}$

B. $\frac{14}{99}$

C. $\frac{7}{12}$

D. none of these

Answer: B



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51. A bag contains 8 red and 4 green balls . Find the probability that

All the 4 balls drawn are green when four balls are drawn at random .

A. $\frac{1}{495}$

B. $\frac{7}{99}$

C. $\frac{5}{12}$

D. $\frac{2}{3}$

Answer: A



52. A bag contains 8 red and 4 green balls . Find the probability that

Two balls are red and one ball is green when three balls are drawn at random .

A. $\frac{55}{99}$

B. $\frac{112}{495}$

C. $\frac{78}{495}$

D. none of these

Answer: D



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53. A bag contains 8 red and 4 green balls . Find the probability that three balls are drawn and none of them is red .

A. $\frac{68}{99}$

B. $\frac{7}{99}$

C. $\frac{4}{495}$

D. none of these

Answer: D



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54. The odds in favour if an event are 2 :7 find the probability of occurrence of this event .

A. $\frac{2}{9}$

B. $\frac{5}{12}$

C. $\frac{7}{12}$

D. $\frac{2}{5}$

Answer: A



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55. The odds against of an event are 5:7 , find the probability of occurrence of this event .

A. $\frac{3}{8}$

B. $\frac{7}{12}$

C. $\frac{2}{7}$

D. $\frac{5}{12}$

Answer: B



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56. If there are two children in a family , find the probability that there is atleast one girl in the family .

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{3}{4}$

D. none of these

Answer: C



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57. From a group of 3 men and 2 women , two persons are selected at random . Find the probability that atleast one women is selected .

A. $\frac{1}{5}$

B. $\frac{7}{10}$

C. $\frac{2}{5}$

D. $\frac{5}{6}$

Answer: B



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58. A box contains 5 defective and 15 non - defective bulbs two bulbs are chosen at random . Find the probability that both the bulbs are non - defective .

A. $\frac{5}{19}$

B. $\frac{3}{20}$

C. $\frac{21}{38}$

D. none of these

Answer: C



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59. A box contains 5 defective and 15 non - defective bulbs . , find the probability that atleast 3 bulbs are defective when 4 bulbs are selected at random .

A. $\frac{31}{969}$

B. $\frac{7}{20}$

C. $\frac{1}{20}$

D. none of these

Answer: A



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Introductory Exercise 20 2

1. The probability of occurrence of two events A and B are $\frac{1}{4}$ and $\frac{1}{2}$ respectively . The probability of their simultaneous occurrence is

$\frac{7}{50}$. Find the probability that either A or B must occur.

A. $\frac{61}{100}$

B. $\frac{29}{100}$

C. $\frac{39}{100}$

D. $\frac{56}{99}$

Answer: A



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2. The probability of occurrence of two events A and B are $\frac{1}{4}$ and $\frac{1}{2}$ respectively . The probability of their simultaneous occurrence is $\frac{7}{50}$., find the probability that neither A nor B occurs .

A. $\frac{25}{99}$

B. $\frac{39}{100}$

C. $\frac{61}{100}$

D. $\frac{17}{100}$

Answer: B



3. If A and B be two events in a sample space such that

$$P(A) = \frac{3}{10} \text{ and } p(B) = \frac{1}{2} \text{ and } P(A \cap B) = \frac{1}{5}$$

. Find $P(A \cup B)$.

A. $\frac{1}{5}$

B. $\frac{2}{5}$

C. $\frac{3}{5}$

D. $\frac{4}{5}$

Answer: C



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4. IF A and B be two events in a sample space

such that

$$P(A) = \frac{2}{5}, P(B) = \frac{1}{2} \text{ and } P(A \cup B) = \frac{3}{5},$$

find $P(A \cap B)$

A. $\frac{3}{10}$

B. $\frac{7}{10}$

C. $\frac{4}{7}$

D. $\frac{4}{15}$

Answer: A



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5. If A and B be two mutually exclusive events in a sample space such that ,

$$P(A) = \frac{2}{5} \text{ and } P(B) = \frac{1}{2} \text{ then}$$

find $P(\overline{A})$:

A. $\frac{2}{5}$

B. $\frac{3}{5}$

C. $\frac{4}{5}$

D. $\frac{6}{7}$

Answer: B



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6. If A and B be two mutually exclusive events in a sample space such that ,

$P(A) = \frac{2}{5}$ and $P(B) = \frac{1}{2}$ then

find $P(\overline{B})$:

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{1}{2}$

D. $\frac{4}{5}$

Answer: C



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7. If A and B be two mutually exclusive events in a sample space such that ,

$P(A) = \frac{2}{5}$ and $P(B) = \frac{1}{2}$ then

find $P(A \cup B)$:

A. $\frac{7}{16}$

B. $\frac{9}{16}$

C. $\frac{9}{10}$

D. $\frac{1}{2}$

Answer: C



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8. If A and B be two mutually exclusive events in a sample space such that ,

$P(A) = \frac{2}{5}$ and $P(B) = \frac{1}{2}$ then

find $P(\overline{A} \cap \overline{B})$:

A. $\frac{4}{5}$

B. $\frac{1}{10}$

C. $\frac{8}{9}$

D. $\frac{13}{20}$

Answer: B



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9. If A and B be two mutually exclusive events in a sample space such that ,

$$P(A) = \frac{2}{5} \text{ and } P(B) = \frac{1}{2} \text{ then}$$

find $P(\bar{A} \cap B)$:

A. $\frac{1}{2}$

B. $\frac{3}{5}$

C. $\frac{4}{7}$

D. $\frac{7}{15}$

Answer: A



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10. If A and B be two mutually exclusive events in a sample space such that ,

$$P(A) = \frac{2}{5} \text{ and } P(B) = \frac{1}{2} \text{ then}$$

find $P(A \cap \overline{B})$:

A. $\frac{1}{5}$

B. $\frac{2}{5}$

C. $\frac{4}{15}$

D. $\frac{3}{10}$

Answer: B



11. IF $P(\bar{A}) = 0.65$, $P(A \cup B) = 0.65$, where A and B are two mutually exclusive events , then find $P(B)$.

A. 0.60

B. 0.30

C. 0.70

D. none of these

Answer: B



12. if A ,B and C are three mutually exclusive and exhaustive events . Find $P(A)$, if

$$P(B) = \frac{3}{2}P(A) \text{ and } P(C) = \frac{1}{2}P(B)$$

A. $\frac{8}{13}$

B. $\frac{5}{13}$

C. $\frac{4}{13}$

D. $\frac{9}{13}$

Answer: C



13. Two dice are tossed once. Find the probability of getting an even number on the first die or a total of 8.

A. $\frac{4}{9}$

B. $\frac{2}{3}$

C. $\frac{5}{9}$

D. $\frac{1}{3}$

Answer: C



14. A die is thrown twice , what is the probabaility that atleast one of the two thrown comes up with the number 5 ?

A. $\frac{11}{36}$

B. $\frac{5}{6}$

C. $\frac{15}{36}$

D. none of these

Answer: A



15. In a single throw of two dice , find the probability that neither a doublet nor a total of 8 will appear .

A. $\frac{7}{15}$

B. $\frac{5}{18}$

C. $\frac{13}{18}$

D. $\frac{3}{16}$

Answer: c

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16. A die is thrown twice, what is the probability that atleast one of the two numbers is 6 ?

A. $\frac{11}{12}$

B. $\frac{11}{36}$

C. $\frac{1}{6}$

D. $\frac{7}{36}$

Answer: B

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17. A card is drawn at random from a well-shuffled deck of 52 cards. Find the probability of its being a heart or a king.

A. $\frac{4}{13}$

B. $\frac{9}{13}$

C. $\frac{8}{13}$

D. $\frac{11}{26}$

Answer: A



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18. Two cards are drawn at random from a well-shuffled pack of 52 cards. What is the probability that either both are red or both are queens?

A. $\frac{17}{112}$

B. $\frac{55}{221}$

C. $\frac{55}{121}$

D. $\frac{33}{221}$

Answer: B



19. A card is drawn from a deck of 52 cards. Find the probability of getting a red card or a heart or a king.

A. $\frac{6}{13}$

B. $\frac{7}{13}$

C. $\frac{11}{26}$

D. $\frac{15}{26}$

Answer: B





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20. 860% of $50 + 50\%$ of $860 = ?$

A. a. 430

B. b. 516

C. c. 860

D. d. 960

Answer: C



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21. From a well-shuffled pack of 52 cards, a card is drawn at random. Find the probability that the drawn card is a king or a queen.

A. $\frac{2}{13}$

B. $\frac{8}{13}$

C. $\frac{11}{13}$

D. none of these

Answer: A



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22. What percent of a day is 3 hours?

A. a. $12 \frac{1}{2}\%$

B. b. $16 \frac{1}{3}\%$

C. c. $18 \frac{2}{3}\%$

D. d. $22 \frac{1}{3}\%$

Answer: B



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23. A natural number is chosen at random from amongst the first 300. what is the probability that the number ,so chosen is divisible by 3 or 5 ?

A. $\frac{48}{515}$

B. $\frac{4}{150}$

C. $1/2$

D. none of these

Answer: C



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24. A natural number is chosen at random from the first 100 natural numbers. What is the probability that the number chosen is a multiple of 2 or 3 or 5?

A. $\frac{30}{100}$

B. $\frac{1}{33}$

C. $\frac{74}{100}$

D. $\frac{7}{10}$

Answer: C



25. A box contains 5 red balls, 8 green balls and 10 pink balls. A ball is drawn at random from the box. What is the probability that the ball drawn is either red or green?

A. $\frac{13}{23}$

B. $\frac{10}{23}$

C. $\frac{11}{23}$

D. $\frac{13}{529}$

Answer: A



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26. A basket contains 20 apples and 10 oranges out of which 5 apples and 3 oranges are defective. If a person takes out 2 at random what is the probability that either both are apples or both are good?

A. $\frac{136}{345}$

B. $\frac{17}{87}$

C. $\frac{316}{435}$

D. $\frac{158}{435}$

Answer: C



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27. In a class 40% of the students offered Physics 20% offered Chemistry and 5% offered both. If a student is selected at random, find the probability that he has offered Physics or Chemistry only.

A. 45 %

B. 55 %

C. 36 %

D. none of these

Answer: B



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28. The probability that an MBA aspirant will join IIM is $\frac{2}{5}$ and that he will join XLRI is $\frac{1}{3}$. find the probability that he will join IIM or XLRI.

A. $\frac{4}{15}$

B. $\frac{7}{15}$

C. $\frac{11}{15}$

D. $\frac{8}{15}$

Answer: C



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29. In a given race, the odds in favour of horses A, B, C,D are 1 : 3, 1 : 4, 1 : 5, 1 : 6 respectively. The probability that horse C wins the race is

A. $\frac{57}{60}$

B. $\frac{1}{20}$

C. $\frac{2}{7}$

D. $\frac{7}{60}$

Answer: A



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Introductory Exercise 20 3

1. If A and B are two events such that $P(A) = 0.5$,

$P(B) = 0.6$ and $P(A \cup B) = 0.8$. Find $P\left(\frac{A}{B}\right)$.

A. $\frac{1}{3}$

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. none of these

Answer: B



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2. If A and B are two events such that $P(A) = 0.4$,

$P(B) = 0.8$ and $P\left(\frac{B}{A}\right) = 0.6$, find $P(A \cup B)$:

A. 0.24

B. 0.96

C. 0.04

D. none of these

Answer: B



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3. Three fair coins are tossed. Find the probability that they are all tails, if one of the coins shows a tail.

A. $\frac{2}{7}$

B. $\frac{5}{14}$

C. $\frac{1}{7}$

D. none of these

Answer: C



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4. A coin is tossed twice and the four possible outcomes are assumed to be equally likely. If A is the event, both head and tail have appeared, and B be the event, at most one tail is observed, find $P(A)$, $P(B)$, $P(A / B)$ and $P(B / A)$.

A. $\frac{2}{3}, 1$

B. $\frac{1}{3}, \frac{2}{3}$

C. $1, \frac{2}{3}$

D. none of these

Answer: A



5. Consider a random experiment in which a coin is tossed and if the coin shows head it is tossed again but if it shows a tail then a die is tossed. If 8 possible outcomes are equally likely. Find the probability that the die shows a number greater than 4 if it is known that the first throw of the coin results in a tail.

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $\frac{2}{5}$

D. $\frac{4}{15}$

Answer: A



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6. A die is rolled . If the outcome is an odd number what is the probability that it is prime ?

A. $\frac{3}{8}$

B. $\frac{7}{9}$

C. $\frac{2}{3}$

D. none of these

Answer: C



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7. A die is thrown twice and the sum of the numbers appearing is observed to be 9. What is the conditional probability that the number 4 has appeared atleast once ?

A. $\frac{1}{2}$

B. $\frac{2}{3}$

C. $\frac{3}{4}$

D. none of these

Answer: A



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8. Two dice are thrown. Find the probability that the sum is 8 or greater than 8, if 4 appears on the first die.

A. $\frac{3}{8}$

B. $\frac{5}{8}$

C. $\frac{1}{2}$

D. none of these

Answer: C



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9. A die is rolled. If the outcome is an odd number, what is the probability that it is a number greater than 1?

A. $\frac{2}{3}$

B. $\frac{1}{3}$

C. $\frac{3}{8}$

D. $\frac{5}{6}$

Answer: A



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10. In a class 45% students read English, 30% read French and 20% read both English and French. One student is selected at random. Find

the probability that he reads English, if it is known that he reads French.

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $\frac{5}{6}$

D. none of these

Answer: B



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11. In a class 45% students read English, 30% read French and 20% read both English and French. One student is selected at random find the probability that he reads French, if it is known that he reads English.

A. $\frac{4}{9}$

B. $\frac{5}{9}$

C. $\frac{2}{9}$

D. $\frac{1}{9}$

Answer: A



12. A couple has two children . Find the probability that both are boys ,if it is known that one of the children is a boy .

A. $\frac{1}{9}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{4}{5}$

Answer: B



13. A couple has two children . find the probability that both are boys ., if it is known that the older child is a boy .

A. $\frac{3}{8}$

B. $\frac{1}{2}$

C. $\frac{5}{8}$

D. $\frac{3}{4}$

Answer: B



14. A bag contains 3 red and 4 black balls and another bag has 4 red and 2 black balls . One bag is selected at random and from the selected at random and from the selected bag a ball is drawn .Let E be the event the first bag is selected F be the event that the second bag is selected , G be the event that ball drawn is red .

find $P(E)$

A. $\frac{1}{2}$

B. $\frac{3}{4}$

C. $\frac{1}{4}$

D. $\frac{5}{8}$

Answer: A



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15. A bag contains 3 red and 4 black balls and another bag has 4 red and 2 black balls . One bag is selected at random and from the selected at random and from the selected bag a ball is

drawn .Let E be the event the first bag is selected F be the event that the second bag is selected , G be the event that ball drawn is red .

find $P(F)$

A. $\frac{3}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. $\frac{1}{6}$

Answer: B



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16. A bag contains 3 red and 4 black balls and another bag has 4 red and 2 black balls . One bag is selected at random and from the selected at random and from the selected bag a ball is drawn .Let E be the event the first bag is selected F be the event that the second bag is selected ,G be the event that ball drawn is red .

find $P\left(\frac{G}{E}\right)$

A. $\frac{5}{6}$

B. $\frac{5}{14}$

C. $\frac{3}{7}$

D. none of these

Answer: C



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17. A bag contains 3 red and 4 black balls and another bag has 4 red and 2 black balls . One bag is selected at random and from the selected at random and from the selected bag a ball is drawn .Let E be the event the first bag is selected F be the event that the second bag is

selected ,G be the event that ball drawn is red .

find $P\left(\frac{G}{\overline{F}}\right)$

A. $\frac{2}{3}$

B. $\frac{1}{9}$

C. $\frac{5}{9}$

D. $\frac{4}{5}$

Answer: A



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18. Two balls are drawn from an urn containing 2 white; 3 red and 4 black balls one by one without replacement. What is the probability that at least one ball is red?

A. $\frac{7}{12}$

B. $\frac{5}{12}$

C. $\frac{3}{10}$

D. none of these

Answer: A



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19. A bag contains 6 red and 9 blue balls. Two successive drawing of four balls are made such that the balls are not replaced before the second draw. Find the probability that the first draw gives 4 red balls and second draw gives 4 blue balls.

A. $\frac{3}{715}$

B. $\frac{7}{715}$

C. $\frac{15}{233}$

D. none of these

Answer: A



Watch Video Solution

20. An urn contains 4 white 6 black and 8 red balls. If 3 balls are drawn one by one without replacement, find the probability of getting all white balls.

A. $\frac{5}{204}$

B. $\frac{1}{204}$

C. $13/204$

D. none of these

Answer: B



Watch Video Solution

21. Two numbers are selected at random from integers 1 through 9. If the sum is even, find the probability that both the numbers are odd.

A. $5/8$

B. $3/8$

C. $3/10$

D. none of these

Answer: A



Watch Video Solution

22. A box contains 25 tickets, numbered 1, 2, 3, ..

25. A ticket is drawn and then another ticket is drawn without replacement. Find the probability that both tickets will show odd numbers.

A. $\frac{37}{50}$

B. $\frac{13}{50}$

C. $13/25$

D. none of these

Answer: B



Watch Video Solution

Introductory Exercise 20 4

1. Let A and B be independent events such that $P(A) = 0.6$ and $P(B) = 0.4$.

find $P(A \cap B)$

A. 0.24

B. 0.76

C. 0.56

D. none of these

Answer: A



Watch Video Solution

2. Let A and B be independent events such that $P(A) = 0.6$ and $P(B) = 0.4$.

find $P(A \cup B)$.

A. 0.24

B. 0.76

C. 0.36

D. none of these

Answer: B



Watch Video Solution

3. Let A and B be independent events such that $P(A) = 0.6$ and $P(B) = 0.4$.

find $P(\overline{A} \cap B)$

A. 0.24

B. 0.16

C. 0.36

D. none of these

Answer: B



Watch Video Solution

4. Let A and B be independent events such that $P(A) = 0.6$ and $P(B) = 0.4$.

find $P(A \cap \overline{B})$

A. 0.24

B. 0.56

C. 0.36

D. 0.76

Answer: C



Watch Video Solution

5. Let A and B be independent events such that $P(A) = 0.6$ and $P(B) = 0.4$.

find $P(\overline{A} \cap \overline{B})$

A. 0.76

B. 0.54

C. 0.36

D. 0.24

Answer: D



Watch Video Solution

6. IF A and B are two independent events such that $P(\overline{A}) = 0.65$, $P(A \cup B) = 0.65$ and

$P(B) = p$, find the value of p .

A. $\frac{7}{13}$

B. $\frac{6}{13}$

C. $\frac{37}{65}$

D. none of these

Answer: B



Watch Video Solution

7. An unbiased die is tossed twice. Find the probability of getting a 1, 2, 3 or 4 on the first

toss and a 4, 5 or 6 on the second toss.

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $\frac{5}{6}$

D. $\frac{1}{6}$

Answer: A



Watch Video Solution

8. How many liters of pure acid are there in 8 liters of a 20% solution?

A. a. 1.4

B. b. 1.5

C. c. 1.6

D. d. 2.4

Answer: A



Watch Video Solution

9. Two persons A and B throw a coin alternatively till one of them gets head and wins

the game. Find their respective probabilities of winning.

A. $\frac{1}{3}, \frac{5}{6}$

B. $\frac{3}{5}, \frac{4}{5}$

C. $\frac{2}{3}, \frac{1}{3}$

D. $\frac{1}{6}, \frac{5}{6}$

Answer: C



Watch Video Solution

10. Three persons A, B, CL throw a die in succession till one gets a six and wins the game. Find their respective probabilities of wining , if A begins.

A. $\frac{36}{91}, \frac{30}{91}, \frac{25}{91}$

B. $\frac{10}{71}, \frac{16}{91}, \frac{22}{81}$

C. $\frac{13}{61}, \frac{15}{61}, \frac{17}{61}$

D. none of these

Answer: A



Watch Video Solution

11. A and B take turns in throwing two dice, the first to throw 9 being awarded the prize. Show that their chance of winning are in the ratio 9:8.

A. $7/8$

B. $9/8$

C. $8/7$

D. $9/10$

Answer: B



Watch Video Solution

12. From a pack of 52 cards, two are drawn one by one without replacement. Find the probability that both of them are kings.

A. $\frac{11}{21}$

B. $\frac{13}{121}$

C. $\frac{1}{221}$

D. $\frac{1}{121}$

Answer: C



Watch Video Solution

13. Ashmit can solve 80 % of the problem given in a book and amisha can solve 70% . What is the probability that at least one of them will solve a problem , selected at random from the book ?

A. 0.60

B. 0.06

C. 0.94

D. 0.56

Answer: C



Watch Video Solution

14. The probability that A hits a target is $\frac{1}{3}$ and the probability that B hits It is $\frac{2}{5}$. What is the probability that the target will be hit , if each one of A and B shoots the target ?

A. $\frac{5}{6}$

B. $\frac{3}{5}$

C. $\frac{11}{15}$

D. $\frac{1}{6}$

Answer: B



Watch Video Solution

15. A problem of mathematics is given to three students A, B, and C, whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ respectively. Then find the probability that the problem will be solved.

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{3}{4}$

D. $\frac{7}{12}$

Answer: C



Watch Video Solution

16. If rs. 2800 is $\frac{2}{7}$ th of the value of a house, the worth of the house in rs. is?

A. a. 8 lakh

B. b. 9.8 lakh

C. c. 10 lakh

D. d. none of these

Answer: B



Watch Video Solution

17. If 35% of a number is 175, then 175 is what percent of that number?

A. a. 35%

B. b. 65%

C. c. 280%

D. d. 420%

Answer: A



Watch Video Solution

18. An agent gets a commission of 2.5% on the sales of cloth. If on a certain day, he gets rs. 12.50 as commission, the cloth sold through him on that day is worth ?

A. a. rs.250

B. b. rs.500

C. c. rs.750

D. d. rs.1250

Answer: A



Watch Video Solution

19. The probability that A can solve a problem is $\frac{2}{3}$ and the probability that B can solve the same problem is $\frac{3}{5}$. Find the probability that atleast one of A and B will be able to solve the problem.

A. $\frac{12}{15}$

B. $\frac{13}{15}$

C. $\frac{19}{45}$

D. none of these

Answer: B



Watch Video Solution

20. A person's salary has increased from rs. 14400 to rs. 16200. What is the percentage increase in his salary?

A. a. 25%

B. b. 12.5%

C. c. 20%

D. d. 35%

Answer: C



Watch Video Solution

21. The probabilities that a student will receive an A, B, C or D grade are 0.4, 0.3, 0.2 and 0.1 respectively. Find the probability that a student

will receive

Not an A grade .

A. 0.4

B. 0.6

C. 0.56

D. none of these

Answer: B



Watch Video Solution

22. The probabilities that a student will receive an A, B, C or D grade are 0.4, 0.3, 0.2 and 0.1 respectively. Find the probability that a student will receive at most a C grade.

A. 0.3

B. 0.7

C. 0.36

D. none of these

Answer: A



Watch Video Solution

23. A's salary is 20% less than B 's salary. Then B's salary is more than A's salary by

A. 0.2

B. 0.5

C. 0.8

D. 0.6

Answer: B



Watch Video Solution

24. The price of an article of rs100 is increased by 20% the again its price increased by 10%. How much is price increased in total price?

A. a. 32

B. b. 20

C. c. 30

D. d. none of these

Answer: C



Watch Video Solution

25. If 50% of $(x-y)$ = 30% of $(x+y)$, then what percent of x is y ?

A. a. 20%

B. b. 25%

C. c. 30%

D. d. 40%

Answer: B



Watch Video Solution

26. ajay and his wife kajal , the probability of ajay 's section is $\frac{1}{7}$ and theat of his wife kajal 's section is $\frac{1}{5}$. What is the probability that atleast one of them will be selected ?

A. $\frac{5}{7}$

B. $\frac{1}{5}$

C. $\frac{2}{7}$

D. $\frac{2}{35}$

Answer: C



Watch Video Solution

27. ajay and his wife kajal , the probability of ajay 's section is $\frac{1}{7}$ and theat of his wife kajal 's section is $\frac{1}{5}$. What is the probability that atleast one of them will be selected ?

A. $\frac{12}{35}$

B. $\frac{6}{35}$

C. $\frac{24}{35}$

D. none of these

Answer: C



28. ajay and his wife kajal , the probability of ajay 's section is $\frac{1}{7}$ and theat of his wife kajal 's section is $\frac{1}{5}$. What is the probability that atleast one of them will be selected ?

A. $\frac{11}{35}$

B. $\frac{24}{35}$

C. $\frac{2}{7}$

D. $\frac{1}{35}$

Answer: A



Watch Video Solution

29. A speaks truth in 60% and Bin 80% of the cases. In what percentage of cases are they likely to contradict each other narrating the same incident?

A. 44 %

B. 36 %

C. 64 %

D. 48 %

Answer: A



Watch Video Solution

30. One fifth of a number is 62. What will 73% of that number be?

A. a. 198.7

B. b. 212.5

C. c. 226.3

D. d. 234.8

Answer: B



Watch Video Solution

31. Two third of three fourths of one fifth of a number is 15. What is 30% of that number?

A. a. 45

B. b. 60

C. c. 75

D. d. 30

Answer: A



Watch Video Solution

32. Three critics review a book odds in favour of the book are 5 :2,4:3 and 3 :4 respectively for the critics find the probability that majority are in favour of the book

A. $\frac{108}{343}$

B. $\frac{209}{343}$

C. $\frac{1}{7}$

D. $\frac{1}{243}$

Answer: B



Watch Video Solution

33. $\frac{3}{4}$ th of $\frac{2}{3}$ rd of $\frac{1}{5}$ th of a number is 249.6.

What is 50% of that number?

A. a. 3794

B. b. 3749

C. c. 3734

D. d. none of these

Answer: C



Watch Video Solution

34. Ishan spent rs. 35645 on buying a bike, rs. 24355 on television and the remaining 20% of the total amount he had cash with him. What was the amount?

A. a. rs. 60000

B. b. rs. 72000

C. c. rs. 75000

D. d. rs. 80000

Answer: B



Watch Video Solution

35. Sonal spent rs. 45760 on the interior decoration for her home, rs. 27896 on buying air conditioner and the remaining 28% of the total

amount she had as cash with her. What was the total amount?

A. a. rs. 98540

B. b. rs. 102300

C. c. rs. 134560

D. d. cannot be determined

Answer: B



Watch Video Solution

36. Rajesh spent rs. 44620 on diwali shopping, rs. 32764 on buying computer and the remaining 32% of the total amount he had as cash with him. What was the total amount?

A. a. rs. 36416

B. b. rs.113800

C. c. rs. 77384

D. d. none of these

Answer: D



Watch Video Solution

37. Harjeet spends 50% of his monthly income on household items, 20% of his monthly income on buying clothes, 5% on medicines and the remaining amount of rs. 11250 he saves. what is his monthly income?

A. a. rs.38200

B. b. rs.34000

C. c. rs.41600

D. d. rs.45000

Answer: B



Watch Video Solution

38. A man buys an article for rs. 27.50 and sells it for rs. 28.60. Find the gain percent.

A. a. 4%

B. b. 3%

C. c. 5%

D. d. 10%

Answer: B



Watch Video Solution

39. If a radio is purchased for rs. 490 and sold for rs. 465.50. Find the loss %.

A. a. 6%

B. b. 5%

C. c. 4%

D. d. 3%

Answer: B



Watch Video Solution

40. A man is known to speak the truth 3 out of 4 times. He throws a dice and reports that it is a six. Find the probability that it is actually a six.

A. $\frac{3}{8}$

B. $\frac{5}{8}$

C. $\frac{7}{8}$

D. $\frac{1}{12}$

Answer: A



Watch Video Solution

41. Find SP when CP = Rs. 56.25 and Gain = 20%.

A. a. rs. 72

B. b. rs. 67.5

C. c. rs. 50

D. d. rs. 75

Answer: B



Watch Video Solution

Exercise Level 1

1. Find SP when CP = rs. 80.40 and loss= 5%?

A. a. rs.81

B. b. rs.84.72

C. c. rs.76.38

D. d. rs.82.9

Answer: B



[Watch Video Solution](#)

2. Find CP when $SP = \text{rs. } 40.60$, $\text{gain} = 16\%$?

A. a. rs.35

B. b. rs.50

C. c. rs.75

D. d. rs. 89

Answer: B



[Watch Video Solution](#)

3. Find CP when SP= rs. 51.70 and loss= 12%?

A. a. rs.58.75

B. b. rs.62.25

C. c. rs.65

D. d. rs.69.27

Answer: B



Watch Video Solution

4. If the cost price is 80% of the selling price, then what is the profit percent ?

A. a. 20%

B. b. 25%

C. c. 80%

D. d. none of these

Answer: A



Watch Video Solution

5. What is S.I. of rs. 800 on 5% per annum for 3 years?

A. a. 120

B. b. 140

C. c. 210

D. d. 230

Answer: B



Watch Video Solution

6. How many years will it take for amount of rs. 600 to yield rs. 120 as interest at 10% per annum of S.I.?

A. a. 1 year

B. b. 2year

C. c. 3 year

D. d. 4 year

Answer: C



Watch Video Solution

7. A sum of rs. 15000 amount gave rs. 4500 as interest in 5year. what is rate of interest?

A. a. 3%

B. b. 4%

C. c. 5%

D. d. 6%

Answer: B



Watch Video Solution

8. Two integers x and y are chosen with replacement out of the set $\{0, 1, 2, 3, \dots, 10\}$. Then the probability that $|x - y| > 5$ is:

A. $\frac{7}{11}$

B. $\frac{40}{121}$

C. $\frac{35}{121}$

D. $\frac{30}{121}$

Answer: D



Watch Video Solution

9. What would be the C.I. on amount rs. 12500 at the rate of 12% p.a. after 2 years?

A. a. 3180rs.

B. b. 3360rs.

C. c. 3540rs.

D. d. 3720rs.

Answer: A



Watch Video Solution

10. If 6 objects are distributed at random among 6 persons, the probability that atleast one of them will not get any thing is :

A. $6 \cdot (6!)$

B. $\frac{5^6}{6!}$

C. $\frac{6^6 - 6!}{6^6}$

D. none of these

Answer: C



Watch Video Solution

11. The difference between simple and compound interest compounded annually on a certain sum of 10000 is 64 for 2 years. Find the interest?

A. a. 8%

B. b. 64%

C. c. 4%

D. d. 2%

Answer: A



Watch Video Solution

12. Four numbers are multiplied together. Then the probability that the product will be divisible by 5 or 10 is :

A. a. $\frac{169}{625}$

B. b. $\frac{369}{625}$

C. c. $\frac{169}{1626}$

D. d. none of these

Answer: B



Watch Video Solution

13. 8 couples (husband and wife) attend a dance show "Nach Baliye" in a popular TV channel. A lucky draw in which 4 persons are picked up for a prize is held, then the probability that there is at least one couple will be selected is :

A. a. $\frac{8}{39}$

B. b. $\frac{15}{39}$

C. c. $\frac{12}{13}$

D. d. none of these

Answer: B



Watch Video Solution

14. Three persons A,B and C are to speak at a function along with five others. If they all speak in random order, the probability that A speaks before B and B speaks before C is

A. a. $\frac{5}{6}$

B. b. $\frac{1}{6}$

C. c. $\frac{1}{2}$

D. d. $\frac{1}{3}$

Answer: B



Watch Video Solution

15. A bag contains 16 coins of which 2 coins are counterfeit with heads on the both sides. The rest are fair coins. One is selected at random from the bag and tossed. The probability of getting a head is :

A. a. $\frac{3}{16}$

B. b. $\frac{13}{16}$

C. c. $\frac{9}{16}$

D. d. $\frac{7}{16}$

Answer: C



Watch Video Solution

16. A committee of five persons is to be chosen from a group of 9 people. The probability that a certain married couple will either serve together or not at all is :

A. a. $\frac{4}{9}$

B. b. $\frac{5}{9}$

C. c. $\frac{13}{18}$

D. d. none of these

Answer: A



Watch Video Solution

17. A speaks truth in 60% cases and B speaks truth in 70% cases. The probability that they will

say the same thing while describing a single event is:

A. a. 0.36

B. b. 0.54

C. c. 0.48

D. d. 0.20

Answer: B



Watch Video Solution

18. Two squares are chosen at random on a chessboard, the probability that they have a side in common is:

A. $\frac{3}{32}$

B. $\frac{1}{32}$

C. $1/18$

D. none of these

Answer: C



Watch Video Solution

19. An old person forgets the last two digits of a telephone number, remembering only that these are different dialed at random. The probability that the number is dialed correctly is :

A. $1/90$

B. $81/91$

C. $2/99$

D. none of these

Answer: A



20. Three squares of a chessboard are chosen at random. the probability that two are of one colour and one of another is :

A. $\frac{67}{992}$

B. $\frac{16}{21}$

C. $\frac{31}{32}$

D. none of these

Answer: B



21. The probability that a leap year selected at random contains either 53 sundays or 53 mondays, is

A. $\frac{17}{53}$

B. $\frac{1}{53}$

C. $\frac{3}{7}$

D. none of these

Answer: C



22. In order to get atleast once a head with probability $P \geq 0.9$. the number of times a coin needs to be tossed is :

A. 3

B. 2

C. 5

D. 4

Answer: D



23. Out of 13 applicants for a job, there are 5 women and 8 men. It is desired to select 2 persons for the job. The probability that at least one of the selected persons will be a woman is.

A. a. $\frac{25}{39}$

B. b. $\frac{31}{65}$

C. c. $\frac{25}{69}$

D. d. $\frac{5}{13}$

Answer: A



Watch Video Solution

24. The difference between C.I. and S.I. on rs. 700 in 2 years at 5% p.a. is:

A. a. rs.10

B. b. rs.5

C. c. rs.1

D. d. rs. 1.75

Answer: B



Watch Video Solution

25. Seven digits from the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 are written in random order. The probability that this seven digit number is divisible by 9 is :

A. a. $\frac{7}{9}$

B. b. $\frac{1}{9}$

C. c. $\frac{2}{9!}$

D. d. $\frac{4}{9}$

Answer: B



Watch Video Solution

Exercise Level 2

1. What is the probability that four S's come consecutively in the word MISSISSIPPI?

A. $\frac{4}{165}$

B. $\frac{4}{135}$

C. $\frac{24}{165}$

D. none of these

Answer: A



Watch Video Solution

2. If a sum of money double itself in 4 years at S.I. then the rate of interest per annum is?

A. a. 25%

B. b. 100%

C. c. 50%

D. d. none of these

Answer: B



Watch Video Solution

3. Nutan invest rs. 22400 on S.I. at the rate of 12% p.a. How much amount she will get after seven year?

A. a. 41,116

B. b. 41,216

C. c. 42,116

D. d. 42,216

Answer: B



Watch Video Solution

4. a consignment of 15 record players contain 4 defectives .the record player are selected at random one by one and examined. those examined are not put back. calculate the

probability that the 9th one examined is the last defective

A. a. $\frac{11}{195}$

B. b. $\frac{17}{195}$

C. c. $\frac{8}{195}$

D. d. $\frac{16}{195}$

Answer: C



Watch Video Solution

5. In a test, an examinee either guesses or copies or knows the answer to a multiple choice question with four choices. The probability that he makes a guess is $\frac{1}{3}$ and the probability that he copies the answer is $\frac{1}{6}$. The probability that his answer is correct, given that he copied it, is $\frac{1}{8}$. Find the probability that he knew the answer to the question, given that he correctly answered it.

A. a. $\frac{17}{39}$

B. b. $\frac{13}{29}$

C. c. $\frac{24}{29}$

D. d. $\frac{24}{39}$

Answer: C



Watch Video Solution

6. Given that the sum of two - negative quantities is 200 , the probability that their product is not less than $\frac{3}{4}$ times their greatest product value is :

A. a. $\frac{99}{200}$

B. b. $\frac{100}{200}$

C. c. $\frac{87}{100}$

D. d. none of these

Answer: B



Watch Video Solution

7. A pack of cards consists of 15 cards numbered 1 to 15. Three cards are drawn at random with replacement. Then, the probability of getting two odd and one even numbered cards, is?

A. a. $\frac{3}{1430}$

B. b. $\frac{100}{2430}$

C. c. $\frac{448}{1125}$

D. d. $\frac{7}{72}$

Answer: B



Watch Video Solution

8. What time taken by sum of rs.7000 to become rs.10500 at the rate of 5% per annum?

A. a. 8years

B. b. 10years

C. c. 5years

D. d. 15years

Answer: A



Watch Video Solution

9. The difference between C.I. and S.I. at a certain rate on rs. 2000 at the end of 2years is rs.12.8.

The rate of inerest is:

A. a. 6.8%

B. b. 8%

C. c. 12.8%

D. d. 16.8%

Answer: C



Watch Video Solution

10. The probabilities that a student passes in Mathematics, Physics and Chemistry are m , p and respectively. Of these subjects the student

has 75% chance of passing in atleast one, a 50% chance of passing in atleast two and a 40% chance of passing in exactly, two, which of the following relations are true.

A. $p + m + c = \frac{27}{20}$

B. $p + m + c = \frac{13}{20}$

C. $p + m + c = \frac{1}{10}$

D. Both (a) and (c)

Answer: D



Watch Video Solution

11. A student appears for tests I. II and III. The student is considered successful if he passes in test I. II or I. III or all the three. The probabilities of the student passing in test I. II and III are m , n and $\frac{1}{2}$ respectively. If the probability of the student to be successful is $\frac{1}{2}$ then which one of the following is correct ?

A. $p = 1, q = 0$

B. $p = 0, q = 1$

C. $\frac{p}{q} = 1$

D. infinitely many solutions

Answer: D



Watch Video Solution

12. If $\frac{1+3p}{3}$, $\frac{1-p}{4}$, $\frac{1-2p}{2}$ are probabilities of three mutually exclusive events then

A. $p = 0, \frac{1}{2}$

B. $p = \frac{3}{4}, 0$

C. $p = \frac{1}{3}, \frac{1}{2}$

D. none of these

Answer: A



Watch Video Solution

13. A letter is taken out at random from 'ASSISTANT' and another is taken out from 'STATISTICS'. The probability that they are the same letters is:

A. a. $\frac{35}{96}$

B. b. $\frac{19}{90}$

C. c. $\frac{19}{96}$

D. d. none of these

Answer: B



Watch Video Solution

14. A sum of money doubles in 3 years at compound interest compounded annually. It will become 4 times of itself in:

A. a. 12 years

B. b. 9 years

C. c. 6 years

D. d. none of these

Answer: B



Watch Video Solution

15. A man takes a step forward with probability 0.4 and back ward with probability 0.6. The probability that at the end of eleven steps he is one step away from the starting point is:

A. a. ${}^{11}C_6(0.1)^{11}$

B. b. ${}^{11}C_6(0.24)^5$

C. c. ${}^{11}C_6(0.2)^{11}$

D. d. none of these

Answer: B



Watch Video Solution

16. Three of the six vertices of a regular hexagon are chosen at random. The probability that the triangle with these three vertices is equilateral equals :

A. a. $\frac{1}{6}$

B. b. $\frac{1}{3}$

C. c. $\frac{1}{10}$

D. d. none of these

Answer: C



Watch Video Solution

17. What is the difference between C.I. and S.I. of rs.12000 on 5% p.a. for 2 years?

A. a. 35

B. b. 25

C. c. 30

D. d. 40

Answer: B



Watch Video Solution

18. Urn A contains 6 red and 4 black balls and urn B contains 4 red and 6 black balls. One ball is drawn at random from urn A and placed in urn B. Then, one ball is drawn at random from

urn B and placed in urn A. If one ball is drawn at random from urn A, the probability that it is found to be red, is....

A. $\frac{32}{65}$

B. $\frac{32}{55}$

C. $\frac{23}{55}$

D. $\frac{56}{65}$

Answer: B



Watch Video Solution

19. The digits 1,2,3,...,9 are written in random order to form a nine digit number. Find the probability that this number is divisible by 11.

A. $\frac{11}{63}$

B. $\frac{11}{81}$

C. $\frac{11}{126}$

D. none of these

Answer: C



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