



MATHS

BOOKS - JBD PUBLICATION

PROBABILITY



1. Three fair coins are tossed. The probability

of getting exactly one head is,

A. $\frac{1}{2}$ B. $\frac{1}{8}$ C. $\frac{3}{8}$ D. 1

Answer:



2. A bag contains 5 white, 4 black and 6 red balls. A ball is drawn at random. The probability that the balls drawn is not white is:

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

B. $\frac{4}{15}$
C. $\frac{2}{5}$
D. $\frac{2}{3}$

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3. Given
$$P(A) = \frac{3}{5}$$
 and $P(B) = \frac{1}{5}$. Find the $P(A \cup B)$ if A and B are mutually exclusive events.

A.
$$\frac{3}{25}$$

B. $\frac{2}{5}$
C. $\frac{4}{5}$
D. $\frac{1}{5}$



4. A fair die is tossed. Find the probability of

getting a number greater than 2.





5. Probability that a leap year selected at random will contain 53 wednesdays is:

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

B. $\frac{7}{366}$
C. $\frac{7}{365}$
D. $\frac{2}{7}$



6. A card is drawn at random from a pack of 52 cards. Put the probability that a card drawn is a red card

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

B. $\frac{1}{2}$
C. $\frac{15}{26}$
D. $\frac{7}{13}$

Answer:

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7. The probability of getting sum 10 in a single thrown of two dice is

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

B. $\frac{1}{4}$
C. $\frac{1}{12}$
D. $\frac{1}{15}$



8. A card is drawn from a pack of 100 cards numbered 1 to 100. The probability of drawing a number which is a square is.

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

B. $\frac{2}{5}$
C. $\frac{1}{10}$

D. None of these



9. If A and B are events such that P(A) = 0.42, P(B) = 0.48 and P(A \cap B) = 0.16, then P(A or B) is equal to

A. 0.2

B. 0.96

C. 0.86

D. 0.74



10. Two dice are thrown, the probability that the sum of the points on two dice will 3 or 5 or 11 is:

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

B. $\frac{2}{9}$
C. $\frac{19}{36}$
D. $\frac{5}{36}$





11. The numer of elements in a sample space,

when a die rolled are:

A. 6

B. 8

C. 5

D. 56

Answer:

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12. Probability of a sure event is:

A. 0

B. 1

 $\mathsf{C}.\,\phi$

D. None of these

Answer:

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13. Probabilityi of an impossible event is:



14. Six boys and six girls sit in a row randomly. The probability that the six girls sit together or the the boys and girls sit alternatly, is

A.
$$\frac{1}{332}$$

B. $\frac{1}{232}$
C. $\frac{1}{132}$



15. If A and B are mutually exclusive events then:

A. $P(A) \leq Pig(\overline{B}ig)$

 $\mathsf{B}.\, P(A) \geq P\big(\overline{B}\big)$

 $\mathsf{C}.\, P(A) < P\big(\overline{B}\big)$



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

A.
$$\frac{1}{11}$$

B. $\frac{4}{11}$
C. $\frac{3}{11}$



17. If $P(A \cup B) = P(A \cap B)$ for any two events A and B then.

A.
$$P(A) = P(B)$$

 $\mathsf{B}.\, P(A) > P(B)$

 $\mathsf{C}.\, P(A) < P(B)$



18. Four persons are selected at random out of 3 men, 2 women and 4 children. The probability that there are exactly 2 children in the selection is:

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

B. $\frac{10}{21}$
C. $\frac{8}{21}$

Answer:

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19. Seven perons are to be seated in a row. The probability that two particular persons sit next to each other is:

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

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

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

D. None of these

Answer:



20. One card is drawn from a pack of 52 cards.

The probability that it is the card of a king or an ace is:

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

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

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

Answer:

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21. Two dice are thrown together, the probability that at least one will show its digit greater than 3 is

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

B. $\frac{3}{4}$
C. $\frac{2}{5}$

Answer:



22. Two dice are thrown simultaneously. The probability of obtainng a total score of 5 is,

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

B. $\frac{2}{9}$
C. $\frac{4}{9}$

Answer:



23. A die is rolled then the probability that a

number 1 or 6 may appear is:

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

B. $\frac{2}{5}$
C. $\frac{1}{3}$

Answer:



24. In a single toss of three coins, the probability of getting head and tail alternatively is:

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

B. $\frac{1}{4}$
C. $\frac{1}{8}$

Answer:



25. The probability of getting at least one tail

in 4 tosses of a coin is:

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

B. $\frac{13}{16}$
C. $\frac{9}{16}$

Answer:



26. The probability of occurrence of an event A

is 0.5 and that of B is 0.3. If A and B are

mutually exclusive events, then the probability

of netiher A nor B is:

A. 0.2

B. 0.3

C. 0.4

D. None of these

Answer:

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27. If A and B are two events, the probability that exactly one of them occurs is given by

A. P(A)+P(B)

 $\mathsf{B}.\, P(A) + P(B) - P(A \cap B)$

 $\mathsf{C}.\, P(A) + P(B) - 2P(A \cap B)$

D. None of these

Answer:

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28. If P(A)=P(B)=x and $P(A \cap B) = P(\overline{A} \cap \overline{B}) = \frac{1}{3}$, then the value of x is:

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

B. $\frac{1}{3}$
C. $\frac{1}{4}$

D. None of these



29. 12 tickets are numbered from 1 to 12 one ticket is drawn at random, then the probability of the number to be divisible by 2 or 3 is:

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

B. $\frac{2}{3}$
C. $\frac{7}{12}$

D. None of these

Answer:

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30. Two cards are drawn at random from a well shuffled deck of 52 cards. The probability of getting at least a spade or a king is:

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

B. $\frac{1}{13}$
C. $\frac{4}{51}$

D. None of these



1. A committee of two persons is selected from two men and two women. What is the probability that the committee will have

no man?

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2. A committee of two persons is selected from

two men and two women. What is the

probability that the committee will have

one man?



3. Three coins are tossed once. Find the

probability of getting

two heads.



4. Three coins are tossed once. Find the probability of getting at least two heads.



5. A coin is tossed. If the outcome is a head, a die is thrown. If the die shows up an even number, the die is thrown again. What is the sample space for the experiment?



6. 2 boys and 2 girls are in room X, and 1 boy and 3 girls in room Y. Specify the sample space for the experiment in which a room is selected and then a person.

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7. An experiment consists of tossing a coin and then throwing it second time if a head occurs. If a tail occurs on the first toss, then a die is rolled once. Find the sample space. **8.** A box contains 1 red and 3 identical white balls. Two balls are drawn at random in succession (one after the other) without replacement. Write the sample space for this experiment.



9. The numbers 1,2,3 and 4 are written separatley on four slips of paper. The slips are put in a box and mixed throughly. A person draws two slips from the box, one after the other without replacement. Describe the sample space for the experiment.

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10. A coin is tossed twice. If the second toss results in a head, then a die is rolled. Write the
sample space of the experiment.



11. A die is rolled. Let E be the event "die shows4" and F be the event "die shows evennumber". Are E and F mutually exclusive ?

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12. Two dice are thrown. The events A, B, C are

as follows:

A: getting an even number on the first die.

- B : getting an odd number on the first die.
- C : getting the sum of the number on the dice

 \leq 5.

Describe the events

(i) A' (ii) not B (iii) A or B (iv) A and B (v) A but

not C (vi) $A \cap B' \cap C' = \phi$.



13. Two dice are thrown. The events A,B and C are as follows:

A= Getting an odd number on the first die.

B= Getting a total of 7 on the two dice.

C= `Getting a sum ge 8 on the two dice.

Describe events

not B?

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14. Which of the following is not a probability

of the occurrence of an event?

 $\frac{2}{3}$

15. Which of the following is not a probability

of the occurrence of an event?

0



16. Which of the following is not a probability

of the occurrence of an event?

$$-\frac{2}{3}?$$

17. Which of the following is not a probability

of the occurrence of an event?

 $\frac{3}{2}.$



18. If $\frac{2}{11}$ is the probabilit of an event, what is

the probability of the event not A.

19. A letter is chosen at random, from the word 'ASSASSINATION'. Find the probability that letter is a vowel

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20. A letter is chosen at random from the word ASSASSINATION. Find the probability that a letter is

(i) vowel.

(ii) a consonant.



21. A coin is tossed twice, what is the

probability that:

one head and one tail occurs?

22. A coin is tossed twice, what is the probability that:
no head occurs?

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23. A coin is tossed twice, what is the probability that atleast one tail occurs ?

24. Three coins are tossed once. Find the

probability of getting

at least two heads.



25. Three coins are tossed once. Find the probability of getting

(i) 2 heads

(ii) at least 2 heads

(iii) atmost 2 heads

(iv) no head

(v) no tail

(vi) at most 2 tails.

(vii) exactly two tails



26. Three coins are tossed. Find the probability

of : exactly 2 tails

27. A die is thrown, find the probability of following events:

A prime number will appear.



28. A die is thrown, find the probability of following events:

A number greater than or equal to 3 will appear.



29. A die is thrown, find the probability of following events:

A number less than or equal to one will appear.

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30. A die is thrown, find the probability of following events:

A number more than 6 will appear.

31. A die is thrown, find the probability of

following events:

A number less than 6 will appear.

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32. A fair coin marked 1 on one face and 6 on the other and a fair die are both tossed. Find the probability that sum of numbers that turns up is

(i) 3 (ii) 12.



33. A fair coin marked 1 on one face and 6 on the other and a fair die are both tossed. Find the probability that sum of numbers that turns up is

(i) 3 (ii) 12.

34. A fair coin with 1 marked on one face and 6 on the other and a fair die are both tossed, find the probability that the sum of numbers that turn up is greater than 5

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35. A fair coin with 1 marked on one face and 6 on the other and a fair die are both tossed, find the probability that the sum of numbers

that turn up is

less than 6.



36. A fair coin with 1 marked on one face and 6 on the other and a fair die are both tossed, find the probability that the sum of numbers that turn up is

3 or 12

37. Given $P(A) = \frac{3}{5}$ and $P(B) = \frac{1}{5}$, find P(A or B) and A & B are mutually exclusive events.

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38. Given
$$P(A) = \frac{3}{5}$$
 and $P(B) = \frac{1}{5}$, find:
P(neither A nor B) if A and B are mutually exclusive.

39. A and B are events such that P(A)=0.42,

P(B)=0.48 and P(A or B)=0.16.

Determine

P(not A)

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40. A and B are events such that P(A)=0.42,

P(B)=0.48 and P(A or B)=0.16.

Determine

P(not B)

41. A and B are events such that P(A) = 0.42, P(B) = 0.48 and $P(A \cap B) = 0.16$.

Determine

 $P(A \cup B)$

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42. A and B are events such that P(A)=0.42,

P(B)=0.48 and P(A or B)=0.16.

Determine

P(not B)



43. A and B are events such that P(A)=0.42,

P(B)=0.48 and P(A or B)=0.16.

Determine

P(not B)

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44. A and B are two events such that P(A)=0.54,

P(B)=0.69 and $P(A \cap B)$ =0.35

Find:

 $P(A \cup B)$



45. A and B are two events such that P(A)=0.54,

P(B)=0.69 and $P(A \cap B)$ =0.35

Find:

 $P(A' \cap B')$

46. A and B are two events such that P(A)=0.54,

P(B)=0.69 and $P(A \cap B)$ =0.35

Find:

 $P(A \cap B')$

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47. A and B are two events such that P(A)=0.54,

P(B)=0.69 and $P(A \cap B)$ =0.35

Find:

 $P(B \cap A')$



48. Find the probability that when a hand of 7 cards is drawn from a well shuffled deck of 52 cards it contains :

(i) all Kings (ii) exactly three Kings (iii) at least three Kings.

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49. Find the probability that when a hand of 7 cards is drawn from a well shuffled deck of 52

cards it contains :

(i) all Kings (ii) exactly three Kings (iii) at least

three Kings.

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50. Find the probability that when a hand of 7 cards is drawn from a well shuffled deck of 52 cards it contains :

(i) all Kings (ii) exactly three Kings (iii) at least three Kings. **51.** Findthe probability of getting king card when a card is drawn frm well shuffled pack 52 cards.

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52. Two cards are drawn simultaneously from a

pack of 52 well shuffled cards. Find the

probability that

both cards are aces.

53. Two cards are drawn simultaneously from a pack of 52 well shuffled cards. Find the probability that one card is of diamond and the other is a spade.

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54. Two cards are drawn simultaneously from a pack of 52 well shuffled cards. Find the

probability that

both cards are red.



55. Two cards are drawn simultaneously from a

pack of 52 well shuffled cards. Find the probability that

one card is red and one is black.

56. In a lottery, there are 35 tickets in all, 10 bearing prize numbers and 25 are blanks. A lady draws 2 tickets at random. What is the probability that she will win

one prize?

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57. In a lottery, there are 35 tickets in all, 10 bearing prize numbers and 25 are blanks. A lady draws 2 tickets at random. What is the

probability that she will win

two prizes?



58. In a lottery, there are 35 tickets in all, 10 bearing prize numbers and 25 are blanks. A lady draws 2 tickets at random. What is the probability that she will win

no prize?



59. In a relay race, there are five teams, A, B, C, D and E.

What is the probability that A,B, C finish first,

second and third respectively?



60. In a relay race, there are five teams, A, B, C,

D and E.

What is the probability that A,B and C are first

three to finish (in any order)?

61. Two students Anil and Ashima appeared in an examination. The probabilities that Anil will qualify the examination is 0.05 and that Ashima will qualify the examination is 0.10. The probabilities that both will gualify the examination is 0.02. Find the probability that a) Both Anil and Ashima will not qualify the examination.

 b) Atleast one of them will not qualify the examination.



62. Two students Anil and Ashima appeared in an examination. The probability that Anil will qualify the examination is 0.05 and that Ashima will qualify the examination is 0.10. The probability that both will qualify the examination is 0.02. Find the probability that : at least one of them will not qualify the examination.



63. Two students Anil and Ashima appeared in an examination. The probability that Anil will qualify the examination is 0.05 and that Ashima will qualify the examination is 0.10. The probability that both will qualify the examination is 0.02. Find the probability that : only one of them will qualify the examination.

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64. The probability that a student will pass the final examination in both English and Hindi is

0.5 and the probability of passing neither is 0.1. if the probability of passing the English examination is 0.75, what is the probability of passing the Hindi examination?



65. An integer is chosen from the first 200

integers. Find the probability that it is divisible

by 6 or 8.



66. A die is rolled twice. Find the probability that the sum of the numbers on the dice is divisible by 3 or 4.



67. A card is drawn from a well shuffled pack of

52 cards. Find the probability that is it:

a king or an ace.

68. A card is drawn from a well shuffled pack of

52 cards. Find the probability that is it:

a spade or a club.

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69. A card is drawn from a well shuffled pack of

52 cards. Find the probability that is it:

a king or a red card.
70. A card is drawn from a well shuffled pack of

52 cards. Find the probability that is it:

neither a heart nor a king.



71. In a town of 6000 people, 1200 are over 50 years in age and 2000 are females. It is known that 30% of the females are over 50 years in age. What is the probability that randomly

chosen individual from the town is either

female or over 50 years in age?

