MATHS

BOOKS - OSWAL PUBLICATION

PROBABILITY

Example

1. Jayanti throws a pair of dice and records the product of the numbers appearing on the dice. Pihu throws 1 dice and records the

squares the number that appears on it. Who has the better chance of getting the number 36? Justify?

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2. A card is drawn at random from a well shuffled pack of 52 playing cards. Find probability of getting neither a red card nor a queen.

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1. A box contains 90 discs, numbered from 1 to 90. If one disc is drawn at random from the box, the probability that it bears prime number less than 23 is

A. $\dfrac{7}{90}$

B. $\dfrac{10}{90}$

C. $\dfrac{4}{45}$

D. $\dfrac{9}{89}$

Answer:

2. One card is drawn from a well shuffled deck of 52 cards. The probability that it is black queen is

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

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

C. $\dfrac{1}{52}$

D. $\dfrac{2}{13}$

Answer:

3. The probability of getting an even number, when a die is thrown once is $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{6}$ (d) $\frac{5}{6}$

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

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

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

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

Answer:

Self Assessment Fill In The Blanks

1. The probability of a number selected at random from the numbers 1, 2, 3, …. 15 is a multiple of 4 is:

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

B. $\dfrac{2}{15}$

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

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

Answer:

2. A bag contains cards numbered from 1 to 25. A card is drawn at random from the bag. The probability that the number on this card is divisible by both 2 and 3. $\dfrac{1}{5}$ (b) $\dfrac{3}{25}$ (c) $\dfrac{4}{25}$ (d) $\dfrac{2}{25}$

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

B. $\dfrac{3}{25}$

C. $\dfrac{4}{25}$

D. $\dfrac{2}{25}$

Answer:

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3. Two different coins are tossed simultaneously. The probability of getting atleast one head is

Self Assessment Very Short Answer Type Questions

1. Two different dice are tossed together, Find the probability that the product of the two numbers on the top of the dice is 6.

2. A die is thrown once. Find the probability of getting "at most 2."

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3. If three different coins are tossed together, then find the probability of getting two heads.

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Self Assessment Ii Short Answer Type Questions

1. A die is thrown once. Find the probability of getting a number which (i) is a prime number (ii) lies between 2 and 6.

2. An integer is chosen at random between 1 and 100. Find the probability that it is (i) divisible by 8 (ii) not divisible by 8

3. Find the probability that a leap year has 53 sundays.

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1. A carton consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects. Jimmy, a trader, will only accept the shirts which are good, but Sujatha, another trader, will only reject the shirts which

have major defects. One shirt is drawn at random from the carton. What is the probability that it is acceptable to (i) Jimmy? (ii) Sujatha?

2. From a pack of 52 playing cards Jacks, queens, kings and aces of red colour are removed. From the remaining, a card is drawn at random. Find the probability that the card

drawn is : a black queen (ii) a red card (iii) a

black jack

3. A bag contains 15 white and some black

balls. If the probability of drawing a black ball

from the bag is thrice that of drawing a white

ball, find the number of black balls in the bag.

4. A box contains cards numbered from 1 to 20. A card is drawn at random from the box. Find the probability that number on the drawn card is

(i) a prime number

(ii) a composite number

(iii) a number divisible by 3

5. Three digit numbers are made using the digits 4, 5, 9 (without repetition). If a number is selected at random, what is the probability that the number will:

(i) be a multiple of 5 ?

(ii) will end with 9 ?

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Self Assessment Long Answer Type Questions

1. Two different dice are thrown together. Find the probability that the numbers obtained have
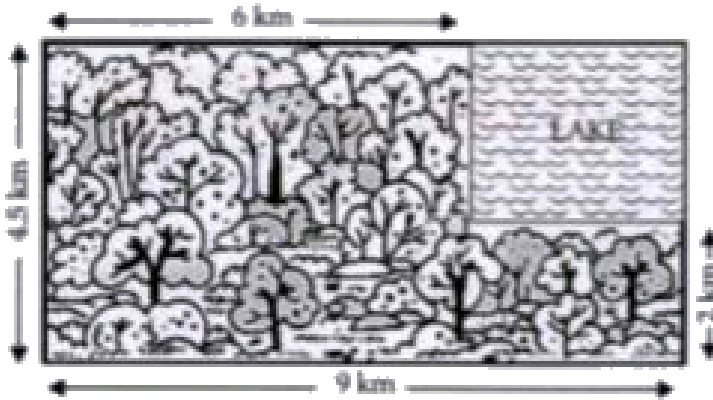
(i) even sum (ii) even product.

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1. A missing helicopter is reported to have crashed somewhere in the rectangular region

shown in figure.

Find the area of entire region.

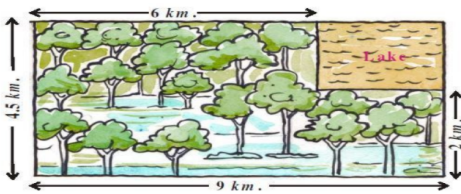A. $32.5\ km^2$

B. $35.2km^2$

C. $40.5km^2$

D. $45km^2$

Answer: C

2. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in figure.

Find the area of lake.
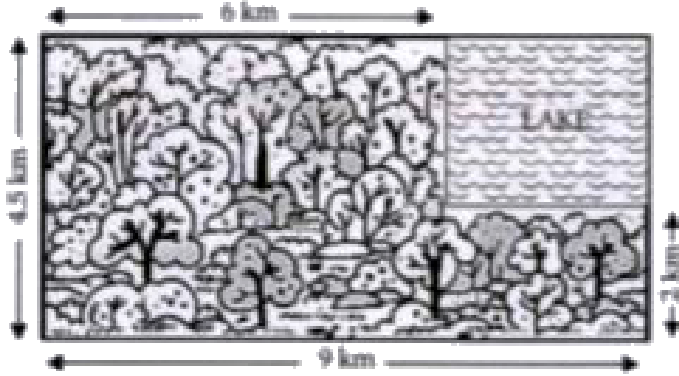
A. $7.0km^2$

B. $6.5km^2$

C. $6.8km^2$

D. $7.5km^2$

Answer: D

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3. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in Figure.

What is the probability that it crashed inside

the lake shown in the figure?

A. $\dfrac{3}{28}$

B. $\dfrac{2}{27}$

C. $\dfrac{3}{25}$
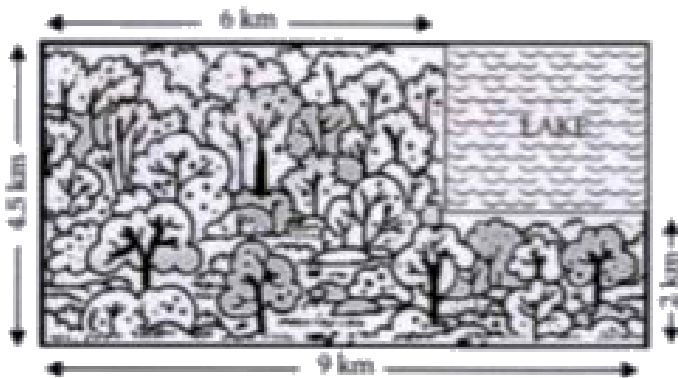
D. $\dfrac{5}{27}$

Answer:

4. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in figure.

What is the probability that it crashed somewhere in the part other than lake shown in the figure ?

A. $\dfrac{5}{27}$

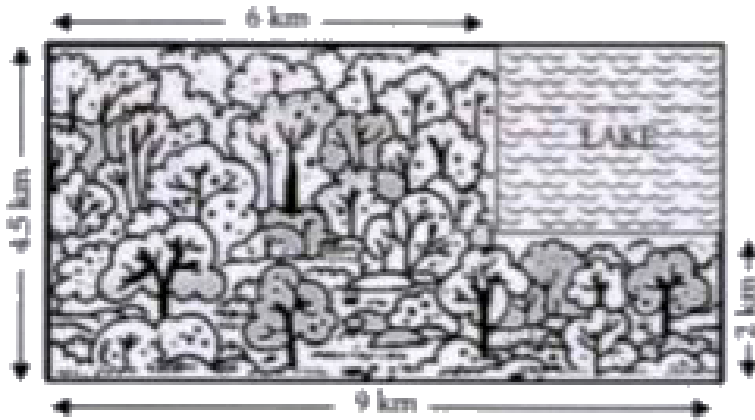B. $\dfrac{4}{27}$

C. $\dfrac{22}{27}$

D. $\dfrac{23}{27}$

Answer:

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5. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in figure.

Find the area of the region other than the lake.

A. $32km^2$

B. $33km^2$

C. $34km^2$

D. $35km^2$

Answer:

Gray dice

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

Blue dice

6.

Two dice, one blue and one grey are thrown at the same time.

What is the probability that the sum of the

two numbers appearing on the top of the dice

is 8 ?

A. $\dfrac{13}{36}$

B. $\dfrac{1}{6}$

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

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

Answer:

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Gray dice

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

Blue dice

7.

Two dice, one blue and one grey are thrown at the same time.

How many total number of favourable outcomes are here?

A. 6

B. 12

C. 18

D. 36

Answer:

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Gray dice

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

Blue dice

8.

Two dice, one blue and one grey are thrown at the same time.

Find the Probability that the sum of the two numbers appearing on the top to the dice is 11.

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

B. $\dfrac{1}{36}$

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

D. $\dfrac{1}{18}$

Answer: D

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Gray dice

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

Blue dice

9.

Two dice, one blue and one grey are thrown at the same time.

Find the probability of getting an even number as the sum.

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

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

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

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

Answer:

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Gray dice

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

Blue dice

10.

Two dice, one blue and one grey are thrown at the same time.

Find the probability of getting a multiple of 2 on one dice and a multiple of 3 on the other.
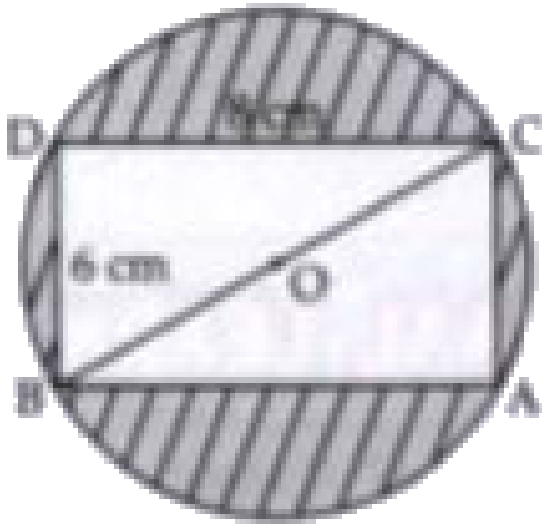
A. $\dfrac{5}{36}$

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

C. $\dfrac{13}{36}$

D. $\dfrac{19}{36}$

Answer:

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11.

In figure, a dart is thrown and lands in the interior of the circle.

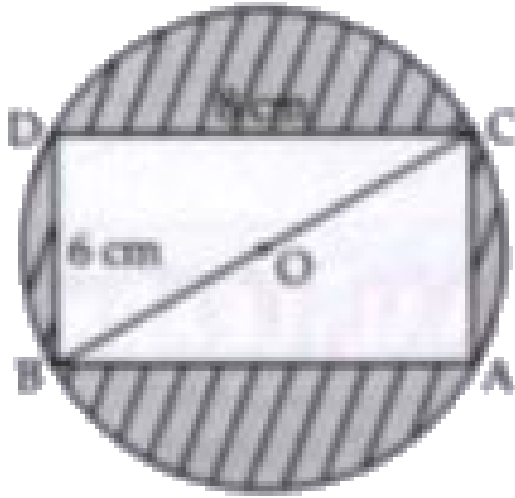Find the area of the circle.

A. $25\pi cm^2$

B. $35\pi cm^2$

C. $25cm^2$

D. $100cm^2$

Answer: A

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12.

In figure, a dart is thrown and lands in the interior of the circle.
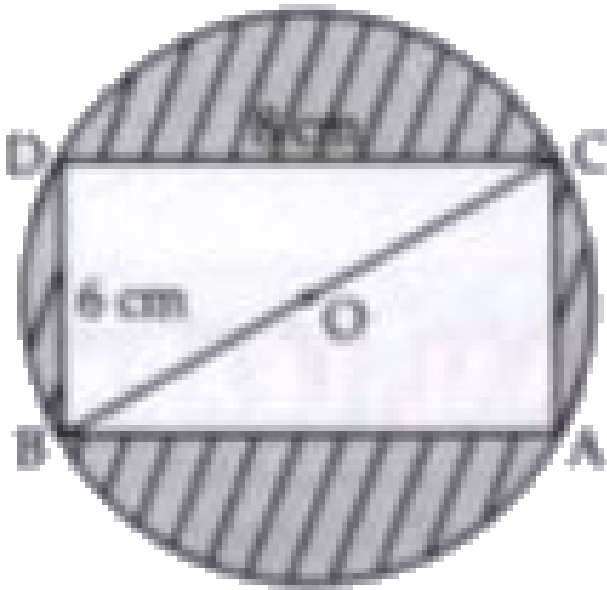
Find the area of rectangle ABCD.

A. $84cm^2$

B. $68cm^2$

C. $28cm^2$

D. $48cm^2$

Answer: D

13.

In figure, a dart is thrown and lands in the

interior of the circle.

Find the area of right triangle ABC.

A. $24cm^2$

B. $36cm^2$

C. $48cm^2$
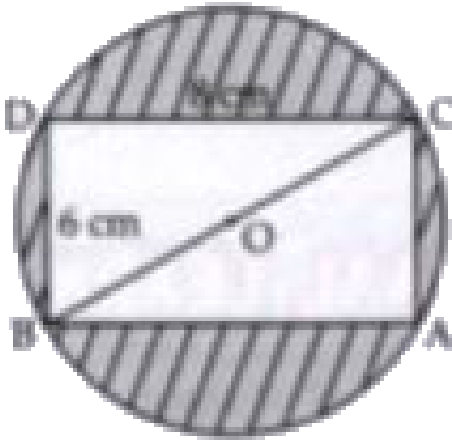
D. $50cm^2$

Answer:

14.

In figure, a dart is thrown and lands in the interior of the circle.

What is the probability that the dart will land in the shaded region ?

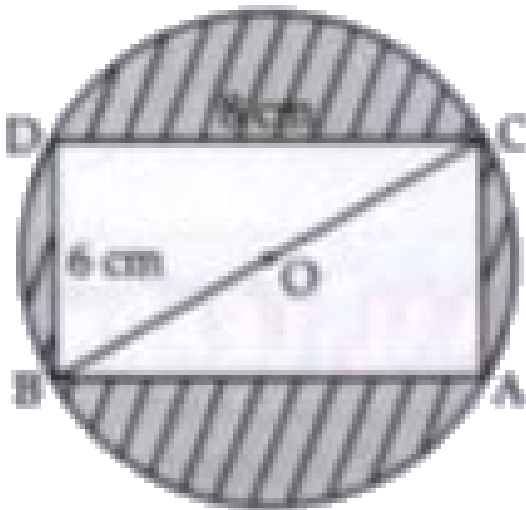A. $\left(\dfrac{25\pi - 48}{25} \right) \times \pi$

B. $\left(\dfrac{25 - 48\pi}{25\pi} \right)$

C. $\left(\dfrac{25\pi - 48}{25\pi} \right)$

D. $\left(\dfrac{25 - 48\pi}{25} \right) \times \pi$

Answer:

15.

In figure, a dart is thrown and lands in the

interior of the circle.

What is the probability that the dart will land in rectangle ABCD region ?
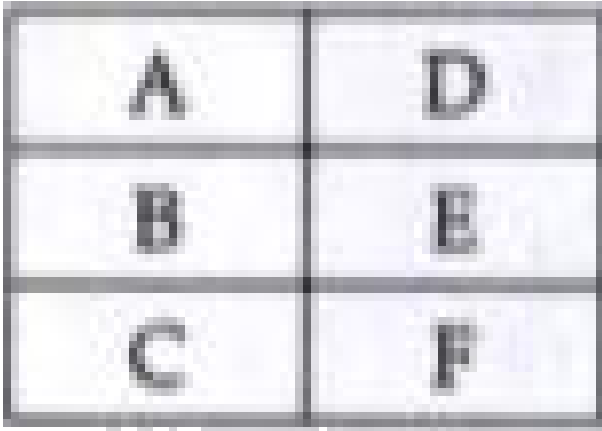
A. $\dfrac{24 - 25\pi}{25\pi}$

B. $\dfrac{24}{25\pi}$

C. $\dfrac{48 - 25\pi}{25\pi}$

D. $\dfrac{48}{25\pi}$

Answer: D

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16.

Figure, shows the top view of an open square box that is divided into 6 compartments with walls of equal height. Each of rectangles D, E, F has twice the area of each of the squares A, B and C. When a marble is dropped into the box at random, it falls into one of the compartments.

What is a probability that marble will fall into compartment F?
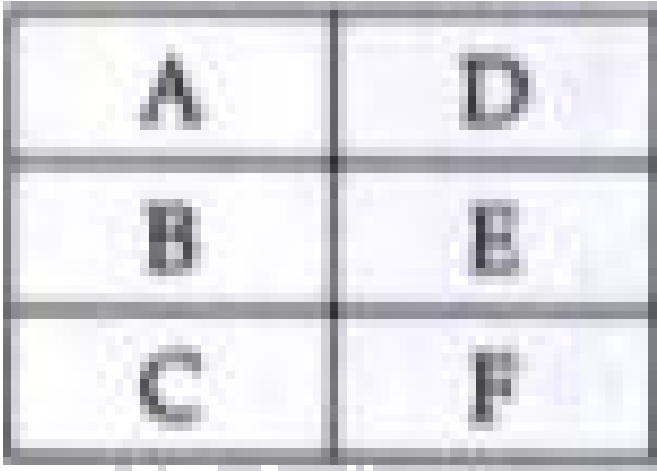
A. $\dfrac{2}{9}$

B. $\dfrac{4}{9}$

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

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

Answer:

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17.

Figure, shows the top view of an open square box that is divided into 6 compartments with walls of equal height. Each of rectangles D, E, F has twice the area of each of the squares A, B and C. When a marble is dropped into the box at random, it falls into one of the compartments.

Find the probability that marble will fall into compartment B.

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

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

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

D. $\dfrac{4}{9}$

Answer:

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18.

Figure, shows the top view of an open square box that is divided into 6 compartments with walls of equal height. Each of rectangles D, E, F has twice the area of each of the squares A, B and C. When a marble is dropped into the box at random, it falls into one of the compartments.

Find the probability that marble will fall into

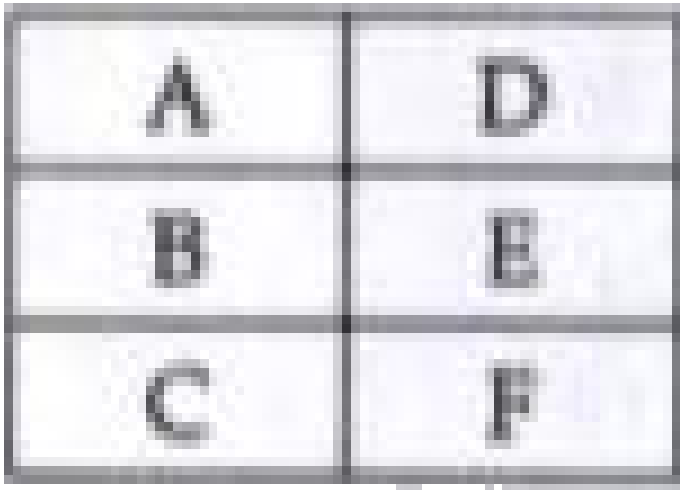compartment D.

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

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

C. $\dfrac{4}{(9)}$

D. $\dfrac{2}{9}$

Answer:

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19.

Figure, shows the top view of an open square box that is divided into 6 compartments with walls of equal height. Each of rectangles D, E, F has twice the area of each of the squares A, B and C. When a marble is dropped into the box at random, it falls into one of the compartments.

Find the probability that marble will fall into compartment B and E.

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

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

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

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

Answer:

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20.

Figure, shows the top view of an open square box that is divided into 6 compartments with walls of equal height. Each of rectangles D, E, F has twice the area of each of the squares A, B and C. When a marble is dropped into the box at random, it falls into one of the compartments.

Find the probability that marble will fall into compartment B and C.
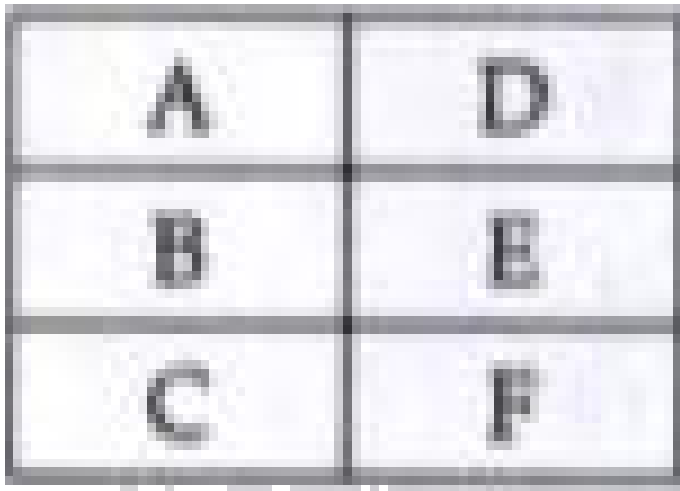
A. $\dfrac{1}{9}$

B. $\dfrac{2}{9}$

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

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

Answer:

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Ncert Corner Exercise 15 1

1. Probability of an event E + probability of the event not E is equal to ....

2. Complete the following statements :

The probability of an event that cannot happen is _____ Such an event is called

3. The probability of an event that is certain to happen is .... and such an event is called ....

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4. The sum of probabilities of all the elementary events of an experiment is ....

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5. The probability of an event is greater then or equal to .... and less then or equal to ....

6. Which of the following experiments have equally likely outcomes? Explain.

A driver attempts to start a car. The car starts or does not start.

7. Which of the following experiments have equally likely outcomes? Explain.

A player attempts to shoot a basketball. She/he shoots or misses the shot.

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8. Which of the following experiments have equally likely outcomes? Explain.

A trial is made to answer a true-false question. The answer is right or wrong.

9. Which of the following experiments have equally likely outcomes? Explain.

A baby is born. It is a boy or a girl.

10. Why is tossing a coin considered to be a fair way of deciding which team should get the ball at the beginning of a football game?

11. Which of the following cannot be the probability of an event ?

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

B. -1.5

C. $15\ \%$

D. 0.7

Answer: b

12. If $P(E) = 0.05$ P(E) = 0.05, what is the probability of not E?

13. A bag contains lemon flavoured candies only. Malini takes out one candy without looking into the bag. What is the probability that she takes out (i) an orange flavoured candy? (ii) a lemon flavoured candy?

14. It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992. What is the probability that the 2 students have the same birthday?

15. A bag contains 3 red balls and 5 black balls. A ball is drawn at random from the bag. What

is the probability that the ball drawn is:

(i) red? (ii) not red?

16. A box contains 5 red marbles, 8 white marbles and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will be:

(i) red ? (ii) white? (iii) not green?

17. A piggy bank contains hundred 50p coins, fifty Rs. 1 coins, twenty ? 2 coins and ten Rs. 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, what is the probability that the coin (i) will be a
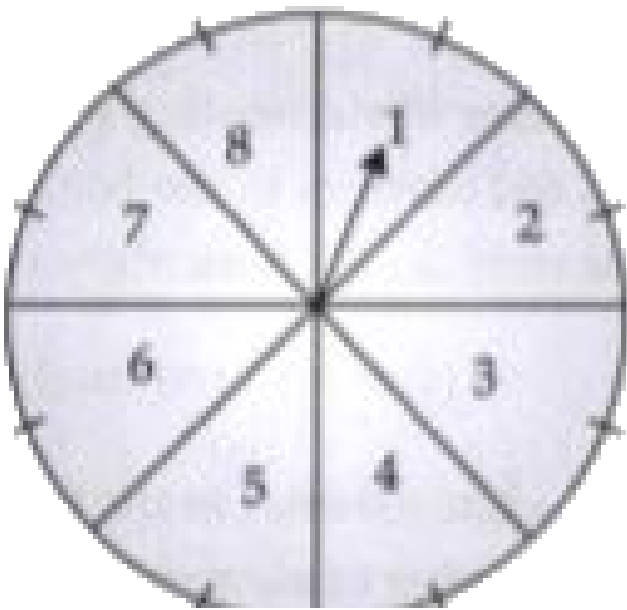
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18. Gopi buys a fish from a shop for his aquarium. The shopkeeper takes out one fish at random from a tank containing 5 male fish

and 8 female fish. What is the probability that the fish taken out is a male fish?

19. A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see figure) and these are equally likely outcomes. What is the probability that it will point at :

(i) 8? (ii) an odd number?

(iii) a number greater than 2? (iv) a number less 9?

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20. A dice is thrown once. Find the probability of getting a prime number .

21. A die is thrown once. What is the probability of getting a number lying between 2 and 6?

22. A die is thrown once. find the probability of getting an odd number

23. One card is drawn from a well shuffled deck of cards . Find the probability of getting a king of red colour .

24. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting :

a face card

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25. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting :

a red face card

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26. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting :

the jack of hearts

27. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting :

a spade

28. One card is drawn from a well - shuffled deck of cards . Find the probability of getting the queen of diamonds.

29. Five cards - the ten, jack, queen, king and ace of diamonds, are well-shuffled with their face downwards. One card is then picked up at random.

What is the probability that the card is the queen?

30. Five cards the ten, jack, queen king and ace of diamonds, are well-shuffled with their face downwards. One card is then picked up at random. If the queen is drawn and put a side, what is the probability that the second card picked up is (a) an ace? (b) a queen?

31. 12 defective pens are accidentally mixed with 132 good ones. It is not possible to just look at a pen and tell whether or not it is defective. One pen is taken out at random from this lot. Determine the probability that the pen taken out is a goo

32. A lot of 20 bulbs contains 4 defective ones. One bulb is drawn at random from the lot.

What is the probability that this bulb is defective?

33. (i) A lot of 20 bulbs contain 4 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective? (ii) Suppose the bulb drawn in (i) is not defective and is not replaced. Now one bulb is drawn at ra

34. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears :

a two-digit number

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35. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that

it bears :

a perfect square number

36. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears :

a number divisible by 5.

37. A child has die whose six faces show the letters as given below:

$$\boxed{A} \ \boxed{B} \ \boxed{C} \ \boxed{D} \ \boxed{E} \ \boxed{A}$$

The die is thrown once. What is the probability of getting (i) A, (ii) D?

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38. Suppose you drop a die at random on the rectangular region shown in Figure. What is

the probability that it will land inside the circle with diameter 1m?

39. A lot consists of 144 ball pens of which 20 are defective and the others are good. Nuri will buy a pen if it is good, but will not buy if it is defective. The shopkeeper draws one pen at random and gives it to her. What is the probability that (i

40. Refer to Example 13. (i) Complete the following table (ii) A student argues that 'there are 11 possible outcomes 2,3,4,5,6,7.8,9,10,11 and 12. Therefore, each of them has a probability $\frac{1}{11}$. Do you agree with this argument? Justify

41. A game consists of tossing a one-rupee coin three times and noting its outcome each

time. Hanif wins if all the tosses give the same result, i.e., three heads or three tails and loses otherwise. Calculate the probability that Hanif will lose the game.

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42. A die is thrown twice. Find the probability that:

5 will not come up either time

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43. A die is thrown twice. Find the probability that:

5 will come up at least once

44. Examine, If two coins are tossed at the same time, there are 3 possible outcomes two heads, two tails, or one of each. Therefore, for each outcome, the probability of occurrence is $1/3$.

45. State true or false and justify

"If a die is thrown, there are two possible outcomes an odd number or an even number. Therefore the probability of getting an odd number is $\dfrac{1}{2}$".

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Ncert Corner Exercise 15 2

1. Two customers Shyam and Ekta are visiting a particular shop in the same week (Tuesday to Saturday). Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on (i) the same day?

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2. A die is numbered in such a way that its face shown the number 1,2,2,3,3,6. It is thrown two

times and the total score in two throw is noted. Complete the following table which gives a few values of the total score on the throws:

Number in second throw			Number in first throw				
+	1	2	2	3	3	6
1	2	3	3	4	4	7
2	3	4	4	5	5	8
2					5	
3						
3			5			9
6	7	8	8	9	9	12

What is the probbility that the total score is () even, (ii) at least 6 ?

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3. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is double that of a red ball, determine the number of blue balls in the bag.

4. A box contains 12 balls out of which x are black. If one ball is drawn at random from the box, what is the probability that it will be a black ball? If 6 more black balls are put in the

box, the probability of drawing a black ball is now double o

5. A jar contains 24 marbles, some are green and others are blue. If a marble is drawn at random from the jar, the probability that it is green is 2/3.Find the number of blue marbles in the jar.

1. If an event cannot occur, then its propbability is

    A. 1

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

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

    D. 0

Answer: D

2. Which of the following cannot be the probability of an event?

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

B. 0.1

C. 3 %

D. $\dfrac{17}{16}$

Answer: D

3. An event is very unlikely to happen. Its probability is closet to

A. 0.0001

B. 0.001

C. 0.01

D. 0.1

Answer: A

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4. If the probability of an event is P, then the probability of its completely event will be

A. p-1

B. p

C. 1-p

D. $1 - \dfrac{1}{p}$

Answer: C

5. The probability expressed as a percentage of a particular occurrence can never be

    A. less than 100

    B. less than 0

    C. greater than 1

    D. anything but a whole number:

Answer: B

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6. If P(A) denotes the probability of an event, then

A. $P(A) < 0$

B. $P(A) > 1$

C. $0 \leq P(A) \leq 1$

D. $-1 \leq P(A) \leq 1$

Answer: C

7. If a card is selected from a deck of 52 cards, then the probability of a being a red face card is

A. $\dfrac{3}{26}$

B. $\dfrac{3}{13}$

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

D. $\dfrac{1}{2}$s

Answer: A

▶ Watch Video Solution

8. The probability that a non-leap your selected at random will contain 53 Sunday is

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

B. $\dfrac{2}{7}$

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

D. $\dfrac{5}{7}$

Answer: A

▶ **Watch Video Solution**

9. When a die is thrown, the probability of getting an odd number less than 3 is

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

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

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

D. 0

Answer: A

▶ Watch Video Solution

10. A card is drawn from a dect of 52 cards. The event E is that card is not an ace of hearts. The number of outcomes favorable to E is

A. 4

B. 13

C. 48

D. 51

Answer: D

 Watch Video Solution

11. The probability of getting a bad egg in a lot of 400 is 0.035. The number of bad eggs in the lot is

A. 7

B. 14

C. 21

D. 28

Answer: B

12. A girl calculates that the probability of her winning the ifrst prize in a lottery is 0.08. If 6000 tickets are sold, then how many tickets has she bought?

A. 40

B. 240

C. 480

D. 750

Answer: C

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13. One ticket is drawn at random from a bag containing ticket numbered 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is.

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

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

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

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

Answer: A

14. Someone is asked to take number from 1 to 100. The probablity that it is a prime, is

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

B. $\dfrac{6}{25}$

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

D. $\dfrac{13}{50}$

Answer: C

15. A school has five houses A, B,C,D and E. A class has 23 students, 4 from houses A, 8 from house C, 2 from house D and rest from house E. A single student is selected at random to be the class monitor. The probability that the selected student is not from A, B and C is

A. $\dfrac{4}{23}$

B. $\dfrac{6}{23}$

C. $\dfrac{8}{23}$

D. $\dfrac{17}{23}$

Answer: B

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Ncert Corner Exercise 13 2

1. If a family having three children, there may

be no girl, one girl, two girls or three girls. So,

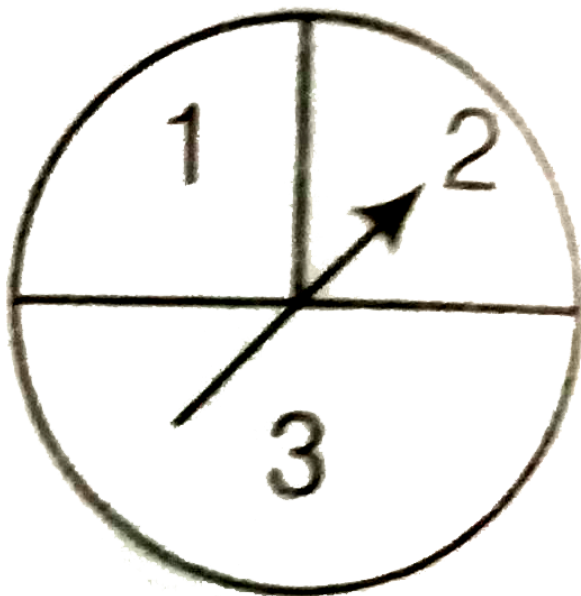the probability of each is $\frac{1}{4}$. Is this correct? Justify your answer.

2. A game consists of spining an arrow which comes to rest pointing at one of regions (1,2 or 3) (see figure). Are the outcomes 1,2 and 3

equally likely to occur? Give reason

3. Apoorv throws two dice once and computes

the product of the numbers appearing on the

dice. Peehu throws one side one die and squares the number that appears on it. Who has the better chance of getting the number of 36? Why?

4. When we toss a coin, there are two possible outcomes-heat or tail. Therefore, the probability of each outcome is $\frac{1}{2}$. Justify your answer.

5. A student says that if you throw a die, it will show up 1 or not 1. Therefore, the probability of getting 1 and theprobability of getting not 1 each is equal to $\dfrac{1}{2}$. Is this correct? Give reasons.

6. I toss three coins together. The possible outocmes are no heads, 1 head 2 head and 3

heads. So, I say that prbability of no heads is $\frac{1}{4}$. What is wrong with this conclusion?

7. If you toss a coin 6 times it comes down head on each occasion Can you say that the probability of getting a head is 1? Give reasons

8. Sushma tosses a coin 3 times and gets tail each time. Do you think that the outcome of next toss will be a tail? Give reasons.

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9. If I toss a coin 3 times and get head and get head each time, should I expect a tail to have a higher chance in the 4th toss? Give a reason in support of your answer.

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10. A bag contains slips numbered from 1 to 100. If Fatima chooses a slip at random from the bag, it will either be an odd number or an even number. Since, this situation has only two possible outcomes, so the probability of each is $\frac{1}{2}$. Justify

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Ncert Corner Exercise 13 3

1. Two dice are thrown at the same time. Find the probability of getting :

same number on both dice.

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2. Two dice are thrown at the same time. Find the probability of getting :

different numbers on both dice.

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3. Two dice are thrown simultaneously. What is the probability that the sum of the number appearing on the dice is

(i) 7? (ii) a prime number? (iii) 1?

4. Two dice are thrown together. Find the probability that the product the number ont the top of the dice is

(i) 6 (ii) 12 (iii) 7

5. Two dice are throw at the same time and the product of the numbers appearing on them is noted. Find the probability that the product is less than 9.

6. Two dice are numbered 1,2,3,4,5,6 and 1,1,2,2,3,3 respectively. They are thrown and the sum of the numbrees of them is noted. Find

the probability of getting each sum from 2 to 9 separately.

7. A coin is tossed two times. Find the probability of getting atmost one head.

8. A coin is tossed 3 times. List the possible outcomes, find the probability of getting :

(i) all heads

(ii) at least two heads

9. Two dice are thrown at the same time. Determine the probability that the difference of the number on the two dice is 2.

10. A bag contains 10 red 5 blue and 7 green balls. A ball is drawn at random. Find the probability of this ball being a

(i) red ball (ii) green ball (iii) not a blue ball

11. The King, Queen, and Jack of clubs are removed from a deck of 52 playing cards and then well shuffled. Now one card is drawn at random from the remaining cards. Determine

the probability that the card is :

(i) a heart (ii) a king

12. Refer to Q. 10 above. What is the probability that the card is :

(i) a club? (ii) 10 of heart?

13. All the jacks, queens and kings are removed from a deck of 52 playing cards. The remaining cards as well shuffled and then one card is drawn at random. Giving ace a value 1 similar value for other fards, find the probability that the card has a value.

(i) 7 (ii) Greater than 7

(iii) less than 7

14. An integer is chosen between 0 and 100. What is the probability that it is

(i) divisible by 7 (ii) not divisible by 7?

15. Cards with numbers 2 to 101 are placed in a box. A card is selected at random. Find the probability that the card has :

(i) an even number (ii) a square number

16. A letter of English alphabets is chosen at random.Determine the probability that the letter is a consonant.

17. There are 100 sealed envelops in a box, 10 of them contain a cash prize of 100 each, 100 of them contain a cash prize of 50 each and 200 of them contain a cash prize of 10 each and rst do not contin any cash prize. If they

are well shuffled and an evelope is picket up out, What is the probabiilty that it contains no cash prize?

18. Box A contains 25 slips of which 19 are marked 1 and other are marked 5 each. Box B contains 50 slips of which 45 are marked 1 each and other are market 13 each. Slips of both boxes are poured into a third box and

resuffled. A slip is drawn at random. What is the probability that it is marked other than 1?

19. A carton of 24 bulbs contain 6 defactive bulbs. One but is drawn at random. What is the probability that the bulbs is not defactive?

If the bulb selected is defective nad it is not replaced and a second bulb ius selected at random from the rest, what is the probability that the second bulb is defactive?

20. A child's game has 8 triangle of which 3 are blue and rest are red, and 10 square of which 6 are blue and rest are red. One piece is lost at random. Find the probability that it is a

(i) trinagle (ii) square

(iii) square of blue colour

(iv) triangle of red colour

21. In a game, the entry fee is of 5. The game consists of a tossing a coin 3 times. If one or two heads show. Sweta gets her entry fee back. If she throw 3 heads, she receives double the entry fees. Otherwise, she will lose. For tossing a coint three times, Find the probability that she

(i) Loses the entry fee.

(ii) gets double entry fee.

(iii) just gets her entry fee.

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22. A die has six faces marked 0, 1, 1, 1, 6, 6. Two such dice are thrown together and total scores are recorded.

How many different scores are possible?

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23. A die has six faces marked 0, 1, 1, 1, 6, 6. Two such dice are thrown together and total scores are recorded.

What is the probability of getting a total of 7?

24. A lot consists of 48 mobile phones of which 42 are good, 3 have only minor defected and 3 have major defects. Varnika will but a phone if its is good but the trader will only buy a mobile, if it has no major defect. One phone is selected at random from the lot. What is the probability that t is

(i) accetable to Varnika?

(ii) acceptable to the trader.

25. A bag contains 24 balls of which x are red, 2x are white and 3x are blue. A ball is selected at random. What is the probability that it is :

(i) not red (ii) white

26. At a fete, cards bearing number 1 to 1000, one number on one card,are put in a box. Each player selects one card at random and that card is not replaced. If the selected card has a

perfect square greater than 500, the player wins a prize. What is probability that

(i) the first player winz a price?

(ii) the second player wins a prize, if the first has won?

Board Corner Very Short Answer Type Questions

1. A number is chosen at random from the number -3, -2, -1,0, 1, 2, 3. What will be the

probability that square of this number is less than or equal to 1 ?

2. The probability of selecting a rotten randomly from a heap of 900 apples is 0.18. What is the number of rotten apples in the heap ?

1. A game consists of tossing a coin 3 times and noting the outcome each time. If getting the same result in all the tosses is a success , find the probability of losing the game.

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2. A die is thrown once. Find the probability of getting (i) a prime number; (ii) a number lying between 2 and 6; (iii) an odd number.

3. The probability of selecting a green marble at random from a jar that contains only green, white and yellow marbles is $1/4$. The probability of selecting a white marble at random from the same jar is $1/3$. If this jar contains 10 yellow marbles. What is the total number of marbles in the jar?

4. A die is thrown twice. Find the probability that:

5 will come up at least once

5. A die is thrown twice. Find the probability that:

5 will not come up either time

6. Two different dice are tossed together. Find the probability :

of getting a doublet.

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7. Two different dice are tossed together. Find the probability :

of getting sum 10, of the number on the two dice.

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8. An integer is chosen at random between 1 and 100. Find the probability that it is :

divisible by 8

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9. An integer is chosen at random between 1 and 100. Find the probability that it is :

not divisible by 8

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10. Two different dice one thrown together. Find the probability that the numbers obtained :

have a sum less than 7

11. Two different dice one thrown together. Find the probability that the numbers obtained :

have a product less than 16

12. Two different dice one thrown together. Find the probability that the numbers obtained :

is a doublet of odd numbers

13. A boy contains 15 white and some black balls. If the probability of drawing a black ball

from the bag is thrice that of drawing a white ball, find the number of black balls in the bag.

Board Corner Long Answer Type Questions

1. Peter throws two different dice together and finds the product of the two numbers obtained. Rina throws a die and squares the number obtained. Who has the better chance to get the number 25?

2. Two different dice are thrown together. Find the probability that the numbers obtained have

(i) even sum (ii) even product.

Stand Alone Mcqs

1. If an event cannot occur, then its propbability is

    A. 1

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

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

    D. 0

Answer: D

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2. Which of the following cannot be the probability of an event?

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

B. 0.1

C. 0.03

D. $\dfrac{17}{16}$

Answer: D

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3. An event is very unlikely to happen. Its probability is closet to

A. 0.0001

B. 0.001

C. 0.01

D. 0.1

Answer: A

4. If the probability of an event is P, then the probability of its completely event will be

A. p-1

B. p

C. 1-p

D. $1 - \dfrac{1}{p}$

Answer: C

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5. The probability expressed as a percentage of a particular occurrence can never be

    A. less than 100

    B. less than 0

    C. greater than 1

    D. anything but a whole number

Answer: B

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6. If P(A) denotes the probability of an event, then

    A. $P(A) < 0$

    B. $P(A) > 1$

    C. $0 \leq P(A) \leq 1$

    D. $-1 \leq P(A) \leq 1$

Answer: C

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7. If a card is selected from a deck of 52 cards, then the probability of a being a red face card is

A. $\dfrac{3}{26}$

B. $\dfrac{3}{13}$

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

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

Answer: A

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8. The probability that a non-leap your selected at random will contain 53 Sunday is

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

B. $\dfrac{2}{7}$

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

D. $\dfrac{5}{7}$

Answer: A

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9. When a die is thrown, the probability of getting an odd number less than 3 is

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

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

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

D. 0

Answer: A

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10. The probability of getting a bad egg in a lot of 400 is 0.035. The number of bad eggs in the lot is

A. 7

B. 14

C. 21

D. 28

Answer: B

11. A girl calculates that the probability of her winning the ifrst prize in a lottery is 0.08. If 6000 tickets are sold, then how many tickets has she bought?

A. 40

B. 240

C. 480

D. 750

Answer: C

12. One ticket is drawn at random from a bag containing ticket numbered 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is.

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

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

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

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

Answer: A

13. Someone is asked to take number from 1 to 100. The probability that it is a prime, is

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

B. $\dfrac{6}{25}$

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

D. $\dfrac{13}{50}$

Answer: C

14. A school has five houses A, B,C,D and E. A class has 23 students, 4 from houses A, 8 from house C, 2 from house D and rest from house E. A single student is selected at random to be the class monitor. The probability that the selected student is not from A, B and C is

A. $\dfrac{4}{23}$

B. $\dfrac{6}{23}$

C. $\dfrac{8}{23}$

D. $\dfrac{17}{23}$

Answer: B

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15. Which of the following cannot be the probability of an event?

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

B. -1.5

C. 0.15

D. 0.7

Answer: B

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Assertion And Reason Based Mcqs

1. In the following question, A statement of Assertion (A) is followed by a statement of

Reason (R). Mark the correct choice as.

Assertion (A): If a box contains 5 white, 2 red and 4 Black marbles, then the probability of not drawing a white marbles from the box is $\frac{5}{11}$.

Reason (R): $P(\overline{E}) = 1 - P(E)$, where E is any event.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: D

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2. Card numbered as 1, 2, 3, ..., 15 are put in a box. One card is drawn at random. The probability of getting a multiple of 5 is

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3. In the following question, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as.

Assertion (A): If a dice is thrown the probability of getting a number less than 3 and greater than 2 is zero.

Reason (R): Probability of an impossible event is zero.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not

correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: A

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4. In the following question, A statement of

Assertion (A) is followed by a statement of

Reason (R). Mark the correct choice as.

Assertion (A): The probability that a non - leap year has 53 Sundays is $\dfrac{1}{7}$.

Reason (R): In a year we have 52 complete weeks which means 364 days and 1 day extra.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: A

Case Based Mcqs

1. Read the following text and answer the following question on the basis of the same:

In a game, the entry fee is 5. The game consists of a tossing a coin 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 heads, she receives double

entry fees. Otherwise she will lose. For tossing

a coin three times, find the following:

What is the total number of outcomes for this

game?

A. 8

B. 2

C. 6

D. None of these

Answer: A

2. Read the following text and answer the following question on the basis of the same:

In a game, the entry fee is 5. The game consists of a tossing a coin 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 heads, she receives double

entry fees. Otherwise she will lose. For tossing

a coin three times, find the following:

Probability that she loses the entry fee:

A. 1

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

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

D. None of these

Answer: B

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3. In a game the entry fee is ₹5. The game consists of tossing coins 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 head, she receivers double entry fees. Otherwise she will lose. For tossing a coin three times, find the probability that she.

(i) loses the entry fee

(ii) gets double entey fee

(iii) just gets her entry fee.

A. 1

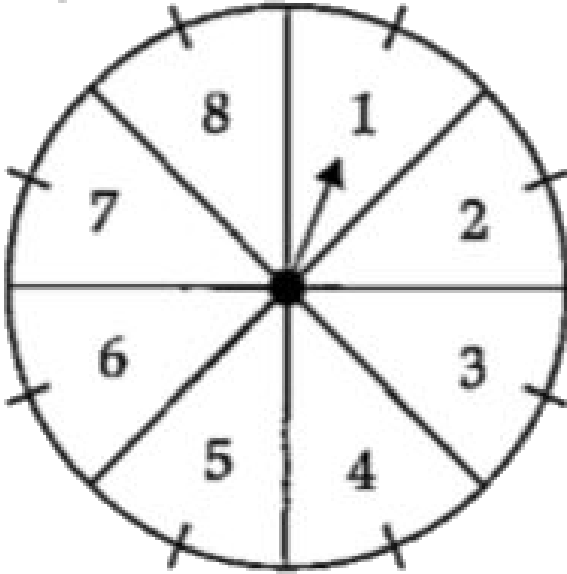B. $\dfrac{1}{8}$

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

D. None of these

Answer: B

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4. Read the following text and answer the following question on the basis of the same:

In a game, the entry fee is 5. The game consists of a tossing a coin 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 heads, she receives double entry fees. Otherwise she will lose. For tossing a coin three times, find the following:

Probability that she just gets her entry fee:

A. 1

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

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

D. None of these

Answer: C

5. Read the following text and answer the following question on the basis of the same:

In a game, the entry fee is 5. The game consists of a tossing a coin 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 heads, she receives double entry fees. Otherwise she will lose. For tossing a coin three times, find the following:

Sum of probability in all the above three cases:
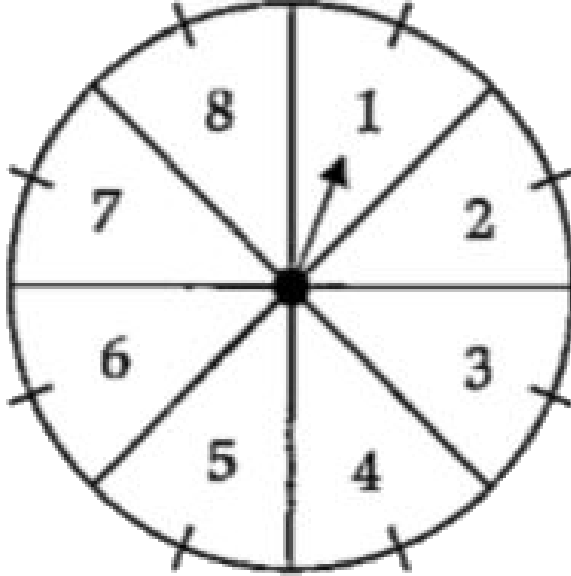
A. 1

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

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

D. None of these

Answer: A

6. Read the following text and answer the following question on the basis of the same.

A game of chances consisting of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see the figure) and these are equally likely outcomes.

Find the probability that point lie on the number 8.

A. $\dfrac{1}{8}$

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

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

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

Answer: A

7. Read the following text and answer the following question on the basis of the same.

A game of chances consisting of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see the figure) and these are equally likely outcomes.

What is the probability that arrow point lies

on the odd number?

A. $\dfrac{1}{8}$
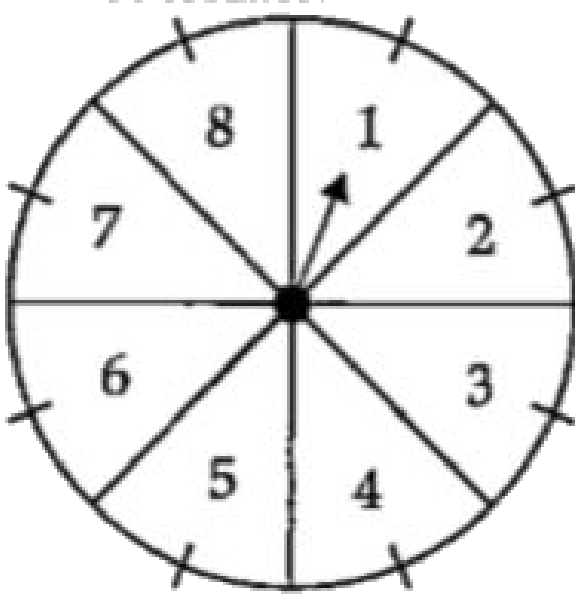
B. $\dfrac{1}{2}$

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

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

Answer: B

8. Read the following text and answer the following question on the basis of the same.

A game of chances consisting of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see the figure) and these are equally likely outcomes.

What is the probability that it will point at a number greater than 2?

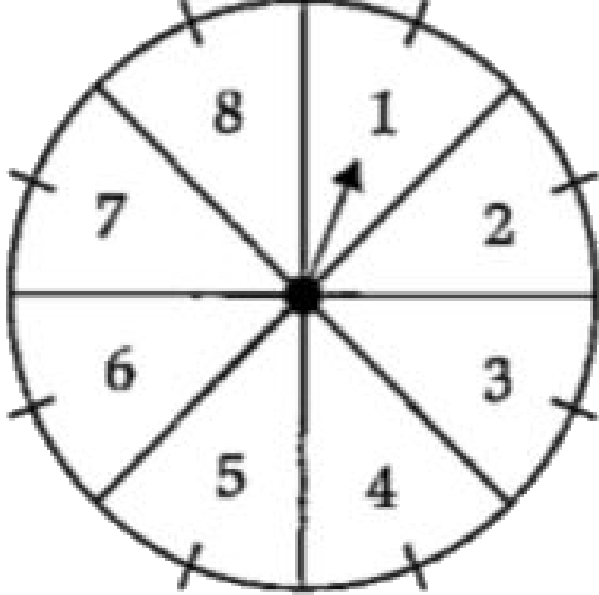A. $\dfrac{1}{2}$

B. 1

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

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

Answer: D

9. Read the following text and answer the following question on the basis of the same.

A game of chances consisting of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see the figure) and these are equally likely outcomes.

Find out the probability that the pointer is always less than 9.
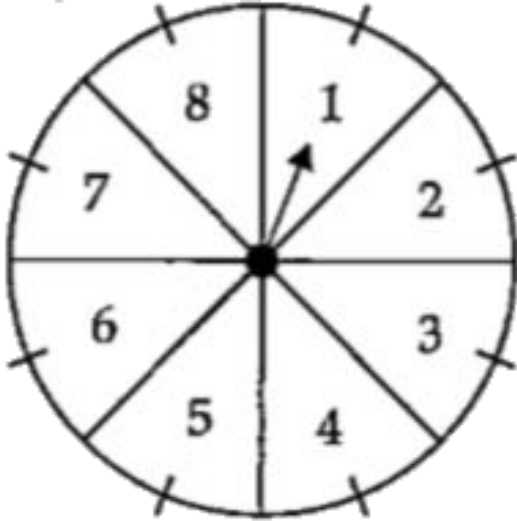
A. 0

B. 1

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

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

Answer: B

10. Read the following text and answer the following question on the basis of the same.

A game of chances consisting of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see the figure) and these are equally likely outcomes.

If pointer lies mid of the number 2 and 3, then

the probability is

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

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

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

D. None of these

Answer: D

11. Read the following text and answer the following question on the basis of the same.

On a weekend Rani was playing cards with her family. The deck has 52 cards. If her brother drew one card.

Find the probability of getting a king of red colour.

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

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

C. $\dfrac{1}{52}$

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

Answer: A

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12. Read the following text and answer the following question on the basis of the same.

On a weekend Rani was playing cards with her

family. The deck has 52 cards. If her brother drew one card.

Find the probability of getting a face card

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

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

C. $\dfrac{3}{52}$

D. $\dfrac{3}{13}$

Answer: D

13. Read the following text and answer the following question on the basis of the same.

On a weekend Rani was playing cards with her family. The deck has 52 cards. If her brother drew one card.

Find the probability of getting a jack of hearts

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

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

C. $\dfrac{3}{52}$

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

Answer: B

---

14. Read the following text and answer the following question on the basis of the same.

On a weekend Rani was playing cards with her family. The deck has 52 cards. If her brother drew one card.

Find the probability of getting a red face card

A. $\dfrac{3}{13}$

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

C. $\dfrac{1}{52}$

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

Answer: D

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15. Read the following text and answer the following question on the basis of the same.

On a weekend Rani was playing cards with her family. The deck has 52 cards. If her brother

drew one card.

Find the probability of getting a spade

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

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

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

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

Answer: D

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Multiple Choice Questions

1. In a family of three children, the probability of having at least one boy is:

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

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

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

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

Answer: D

▶ View Text Solution

2. The probability that a number selected at random from the numbers 1, 2, 3, ..., 15 is a multiple of 4 is:

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

B. $\dfrac{2}{15}$

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

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

Answer: C

▶ **View Text Solution**

3. A bag contains cards numbered 1 to 25. A card is drawn at random from the bag. The probability that the number on the card is divisible by both 2 and 3 is:

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

B. $\dfrac{3}{25}$

C. $\dfrac{4}{25}$

D. $\dfrac{2}{25}$

Answer: C

▶ **View Text Solution**

4. The probability of getting an even number when a die is thrown once is:

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

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

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

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

Answer: A

▶ View Text Solution

5. A box contains 90 discs, numbered from 1 to 90. If one disc is drawn at random from the box, the probability that it bears a prime number less than 23 is:

A. $\dfrac{7}{90}$

B. $\dfrac{10}{90}$

C. $\dfrac{4}{45}$

D. $\dfrac{9}{89}$

Answer: C

6. If P(A) denotes the probability of an event A, then:

    A. $P(A) < 0$

    B. $P(A) > 1$

    C. $0 < P(A) \leq 1$

    D. $-1 \leq P(A) \leq 1$

Answer: C

7. One ticket is drawn at random from a bag containing tickets numbered 1 to 40. The probability that the selected ticket has a number that is a multiple of 7 is:

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

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

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

D. $\dfrac{7}{40}$

Answer: B

8. Two dice are thrown together. The probability of getting the same number on both the dice is:

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

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

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

D. $\dfrac{1}{12}$

Answer: C

9. Cards bearing numbers 2, 3, 4, ..., 11 are kept in a bag. A card is drawn at random from it. The probability of getting a card with a prime number is:

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

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

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

D. $\dfrac{5}{9}$

Answer: A

▶ **View Text Solution**

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10. The probability of throwing a number greater than 2 with a single die is:

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

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

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

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

Answer: A

▶ **View Text Solution**

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11. A card is drawn from a well-shuffled deck of 52 playing cards. The probability that the card will not be an ace is:

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

B. $\dfrac{12}{13}$

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

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

Answer: C

▶ View Text Solution

12. Which of the following cannot be the probability of an event:

A. 1.5

B. $1/4$

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

D. 0.3

Answer: A

▶ View Text Solution

13. A die thrown once. What is the probability of getting a number less than 3?

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

B. $\dfrac{1}{6}$

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

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

Answer: B

▶ **View Text Solution**

14. Cards bearing numbers 3 to 20 are placed in a bag and mixed thoroughly. A card is taken out of the bag at random. What is the probability that the number on the card taken out is an even number?

A. $\dfrac{9}{17}$

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

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

D. $\dfrac{7}{18}$

Answer: B

▶ **View Text Solution**

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15. A bag contains 4 red and 6 black balls. A ball is taken out of the bag at random. What is the probability of getting a black ball?

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

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

C. $\dfrac{1}{10}$

D. None of these

Answer: B

▶ **View Text Solution**

16. A card is drawn out from a well-shuffled deck of 52 cards. What is the probability of getting a black king?

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

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

C. $\dfrac{1}{28}$

D. None of these

Answer: B

▶ **View Text Solution**

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17. Two friends were born in the year 2000. What is the probability that they have the same birthday?

A. $\dfrac{1}{365}$

B. $\dfrac{1}{366}$

C. $\dfrac{2}{365}$

D. $\dfrac{1}{183}$

Answer: B

▶ **View Text Solution**

18. What is the probability that two friends have different birthdays?

A. $\dfrac{1}{365}$

B. $\dfrac{2}{365}$

C. $\dfrac{364}{365}$

D. $\dfrac{363}{365}$

Answer: C

▶ **View Text Solution**

19. A die is thrown once. The probability of getting a prime number is:

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

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

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

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

Answer: C

▶ **View Text Solution**

20. What is the probability of an impossible event?

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

B. 1

C. 0

D. More than 1

Answer: C

▶ **View Text Solution**

21. The probability of getting a number four or more in throwing a die is:

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

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

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

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

Answer: C

▶ **View Text Solution**

22. The probability of an event that is certain to happen is:

A. -1

B. 1

C. 0

D. None of the above

Answer: B

▶ View Text Solution

23. A number is selected at random from first 50 natural number, then the probability of getting a perfect square is ....

A. $\dfrac{7}{50}$

B. $\dfrac{1}{50}$

C. $\dfrac{9}{50}$

D. $\dfrac{11}{50}$

Answer: A

▶ View Text Solution

24. The sum of the probability of all the elementary events of an experiment is ....

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

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

C. 0

D. 1

Answer: D

▶ **View Text Solution**

Very Short Answer Type Questions

1. If two dice are rolled together, find the probability of getting an even number on both the dice.

▶ View Text Solution

2. When a number is selected at random from numbers 1 to 30, what is the probability that it is a prime number?

▶ View Text Solution

3. Two different coins are tossed simultaneously. Find the probability of getting at least one head.

4. A letter of English alphabet is chosen at random. Determine the probability that the chosen letter is a consonant.

5. A card is drawn from a well-shuffled deck of 52 playing cards. Then what is the probability that the card will not be a diamond?

▶ View Text Solution

6. The probability of selecting a rotten apple randomly from a heap of 900 apples is 0.18. What is the number of rotten apples in the heap?

▶ View Text Solution

7. A dice is thrown once. What is the probability of getting a number less than 4?

▶ View Text Solution

8. Cards bearing numbers 2 to 21 are placed in a bag and mixed thoroughly. A card is taken out of the bag at random. What is the probability that the number on the card taken out is an even number?

▶ View Text Solution

9. Cards marked with numbers 3, 4, 5, ..., 50 are placed in a box and mixed thoroughly. A card is drawn at random from the box. Find the probability that the selected card bears a perfect square number.

▶ View Text Solution

10. A card is drawn out from a well-shuffled deck of 52 cards. What is the probability of getting a red queen?

11. A dice is thrown once. Find the probability of getting an even number.

12. Two different dice are tossed together. Find the probability that

(i) the number on each dice is odd,

13. Two different dice are tossed together. Find the probability that the sum on the numbers, appearing on the two dice, is 5

▶ View Text Solution

14. Rahim tosses two different coins simultaneously. Find the probability of getting at least one tail.

▶ View Text Solution

15. Two different dice are rolled simultaneously. Find the probability that the sum of the numbers appearing on the two dice is 10.

▶ View Text Solution

16. A card is drawn from a well shuffled pack of 52 playing cards. Find the probability that the drawn card is neither a king nor a queen.

▶ View Text Solution

17. A card is drawn from a well shuffled pack of 52 playing cards. Find the probability of getting

a red-faced card

18. A card is drawn from a well shuffled pack of 52 playing cards. Find the probability of

getting

a black-king.

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

a red king,

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

a queen or a jack.

21. A ticket is drawn at random from a bag containing tickets numbered from 1 to 40. Find the probability that the selected ticket has a number which is a multiple of 5.

22. Cards each marked with one of the numbers between 6, 7, 8, ..., 15 are placed in a box and mixed thoroughly. One card is drawn at random from the box. What is the probability of getting a card with a number less than 10 ?

23. A box contains 3 blue, 2 white and 4 red marbles. If a marble is drawn out at random from the box, what is the probability that it will not be a white marble?

24. Two dice are thrown simultaneously. Find the probability that the sum of the numbers appearing on the two dice is more than 9.

25. Find the probability that a number selected at random from the numbers 1 to 25 is not a prime number.

26. A card is drawn at random from a well-shuffled pack of 52 cards. Find the probability that the card is neither a red card nor a jack,

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

face card,

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

a card which is neither a king nor a red card.

29. A dice is thrown once. Find the probability

of getting a number

less than three,

30. A dice is thrown once. Find the probability

of getting a number

more than four

31. What is the probability that a number selected at random from the number 3, 4, 5, 6, 7, 8, 9 is a multiple of 4?

▶ **View Text Solution**

32. Samsung Electronics has launched two new mobile hand sets : Set-I and Set - II. Set-I is cheaper as compared to Set-II. But Set-II has an built-in device to recharge the battery with

auto-cut power supply when it is fully charged.

In a lot there are 250 pieces of Set-I and 100 of

Set-II. If a mobile is picked at random:

Find the probability of getting Set-I

> ▶ **View Text Solution**

33. Samsung Electronics has launched two new

mobile hand sets : Set-I and Set - II. Set-I is

cheaper as compared to Set-II. But Set-II has an

built-in device to recharge the battery with

auto-cut power supply when it is fully charged.

In a lot there are 250 pieces of Set-I and 100 of Set-II. If a mobile is picked at random:

Find the probability of getting Set-II.

▶ **View Text Solution**

34. In answering a question of MCQ test with 4 choices per question, one of them being correct, a student knows the answer, guesses or copies the answer. Suppose a student guesses the answer. What is the probability that his answer is correct?

35. Honey goes to school either by a car driven by his driver or uses his bicycle. Probability that he will use the car is $\dfrac{3}{7}$. What is the probability that he will use his bicycle for going to the school?

Short Answer Type Questions

1. A box contains 100 red cards, 200 yellow cards and 50 blue cards. If a card is drawn at random from the box, then find the probability that it will be:

a blue card,

2. A box contains 100 red cards, 200 yellow cards and 50 blue cards. If a card is drawn at random from the box, then find the probability

that it will be:

not a yellow card,

3. A box contains 100 red cards, 200 yellow cards and 50 blue cards. If a card is drawn at random from the box, then find the probability that it will be:

neither yellow nor a blue card.

4. All kings, queens and aces are removed from a pack of 52 cards. The remaining cards are well-shuffled and then a card is drawn from it. Find the probability that the drawn card is a black face card,

5. All kings, queens and aces are removed from a pack of 52 cards. The remaining cards are well-shuffled and then a card is drawn from it.

Find the probability that the drawn card is

a red card

6. Cards marked with numbers 5, 6, 7, ..., 74 are

placed in a bag and mixed thoroughly. One

card is drawn at random from the bag. Find

the probability that the number on the card is

a perfect square.

7. A box contains 80 discs numbered from 1 to 80. If one disc is drawn at random from the box, find the probability that the number it bears is a perfect square.

▶ View Text Solution

8. Two dice are rolled together. Find the probability of getting such number on the two dice whose product is a perfect square.

▶ View Text Solution

9. A game consists of tossing a coin three times and noting the outcome each time. Hanif wins if he gets three heads or three tails and loses otherwise. Calculate the probability that Hanif will lose the game.

▶ View Text Solution

10. There are 100 cards in a bag on which numbers from 1 to 100 are written. A card is taken out from the bag at random. Find the

probability that the number on the selected card

is divisible by 9 and is a perfect square

▶ View Text Solution

11. There are 100 cards in a bag on which numbers from 1 to 100 are written. A card is taken out from the bag at random. Find the probability that the number on the selected card

is a prime number greater than 80.

12. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball from the bag is thrice that of a red ball, find the number of blue balls in the bag.

13. From a pack of 52 playing cards, jacks, queens and kings of red colour are removed. From the remaining, a card is drawn at

random. Find the probability that drawn card is:

a black king

14. From a pack of 52 playing cards, jacks, queens and kings of red colour are removed. From the remaining, a card is drawn at random. Find the probability that drawn card is:

a card of red colour

15. From a pack of 52 playing cards, jacks, queens and kings of red colour are removed. From the remaining, a card is drawn at random. Find the probability that drawn card is:

a card of black colour

16. It is known that a box of 200 electric bulbs contains 16 defective bulbs. One bulb is taken out at random from the box. What is the probability that the bulb drawn is defective

▶ View Text Solution

17. It is known that a box of 200 electric bulbs contains 16 defective bulbs. One bulb is taken out at random from the box. What is the

probability that the bulb drawn is

non-defective?

18. A bag contains cards numbered from 1 to

30. If a card is drawn at random from the bag

after mixing them thoroughly, find the

probability that the number on the card is not

divisible by 3

19. Find the probability of getting 53 Fridays in

a leap year.

> ▶ View Text Solution

20. A card is drawn at random from a well

shuffled pack of 52 cards. Find the probability

of getting

a card of spades or an ace

> ▶ View Text Solution

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

a red king

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

either a king or a queen,

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

neither a king nor a queen.

 View Text Solution

24. A bag contains tickets numbered 11, 12, 13,..., 30. A ticket is drawn at random from the bag. Find the probability that the number on the

ticket is a

multiple of

> ▶ View Text Solution

25. A bag contains tickets numbered 11, 12, 13,...,

30. A ticket is drawn at random from the bag.

Find the probability that the number on the

ticket is a

is greater than

> ▶ View Text Solution

26. A die is thrown twice. Find the probability that:

5 will come up at least once.

▶ **View Text Solution**

27. A die is thrown twice. Find the probability that:

5 will not come up either time.

▶ **View Text Solution**

28. The probability of selecting a blue marble at random from a jar that contains only blue, black and green marbles is $\dfrac{1}{5}$. The probability of selecting a black marble at random from the same jar is $\dfrac{1}{4}$. If the jar contains 11 green marbles, find the total number of marbles in the jar.

> ▶ **View Text Solution**

29. A group consists of 12 persons out of which 3 are extremely patient, other 6 are

extremely honest and rest are extremely kind.

A person from the group is selected at random. Assuming that each person is equally likely to be selected, find the probability of selecting a person who is

extremely patient

30. A group consists of 12 persons out of which 3 are extremely patient, other 6 are extremely honest and rest are extremely kind.

A person from the group is selected at random. Assuming that each person is equally likely to be selected, find the probability of selecting a person who is extremely kind or honest.

31. A game of chance consists of spinning an arrow which comes to rest pointing at one of the number 1, 2, 3, 4, 5, 6, 7, 8 (see figure) and these are equally likely outcomes. What is the

probability that it will point at:

8
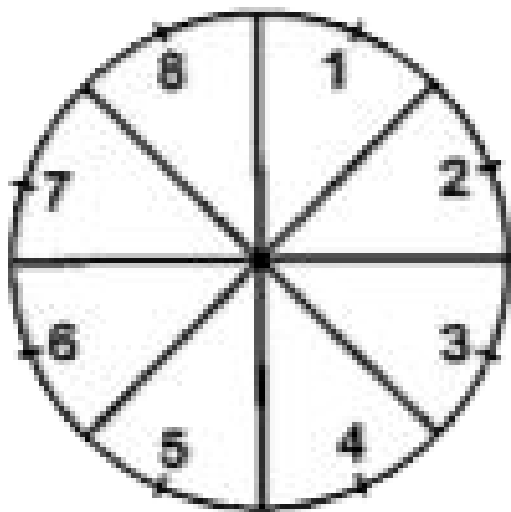
32. A game of chance consists of spinning an arrow which comes to rest pointing at one of

the number 1, 2, 3, 4, 5, 6, 7, 8 (see figure) and these are equally likely outcomes. What is the probability that it will point at:
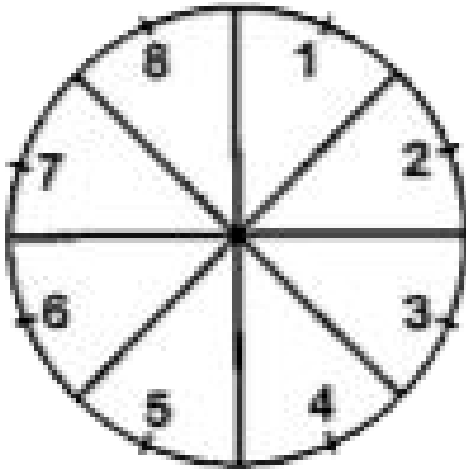
an odd number?

View Text Solution

33. A game of chance consists of spinning an arrow which comes to rest pointing at one of the number 1, 2, 3, 4, 5, 6, 7, 8 (see figure) and these are equally likely outcomes. What is the probability that it will point at:
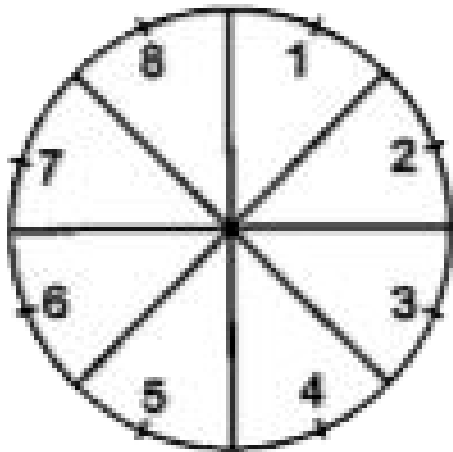
a number greater than 2?

View Text Solution

34. A game of chance consists of spinning an arrow which comes to rest pointing at one of the number 1, 2, 3, 4, 5, 6, 7, 8 (see figure) and these are equally likely outcomes. What is the probability that it will point at:
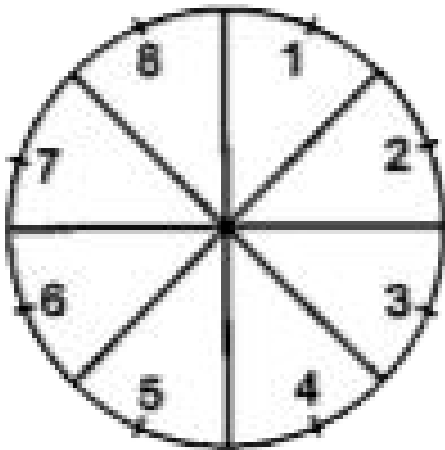
a number less than 9 ?

Long Answer Type Questions

1. Five cards the ten, jack, queen, king and ace of diamonds are well shuffled with their face downwards. One card is then picked up at random.

What is the probability that the drawn card is a queen?

2. Five cards the ten, jack, queen, king and ace of diamonds are well shuffled with their face downwards. One card is then picked up at random.

If the queen is drawn and put aside and a second card is drawn, find the probability that the second card is

an ace

▶ View Text Solution

3. Five cards the ten, jack, queen, king and ace of diamonds are well shuffled with their face downwards. One card is then picked up at random.

If the queen is drawn and put aside and a second card is drawn, find the probability that the second card is

a queen

▶ View Text Solution

4. A piggy bank contains hundred 50 p coins, fifty ₹ 1 coins, twenty ₹2 coins and ten ₹ 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell

will be a 50p coin

▶ View Text Solution

5. A piggy bank contains hundred 50 p coins, fifty ₹ 1 coins, twenty ₹2 coins and ten ₹ 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell

will be of value more than ₹,

▶ View Text Solution

6. A piggy bank contains hundred 50 p coins, fifty ₹ 1 coins, twenty ₹ 2 coins and ten ₹ 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell

will be value less than ₹ 5

▶ View Text Solution

7. A piggy bank contains hundred 50 p coins, fifty ₹ 1 coins, twenty ₹2 coins and ten ₹ 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell

will be a ₹ 1 or ₹ 2 coin.

▶ View Text Solution

8. Two different dice are thrown together. Find the probability that the numbers obtained have

even sum

9. Two different dice are thrown together. Find the probability that the numbers obtained have

even product.

10. Find the probability that a number selected

at random from the numbers 1,2,3,4,..., 34, 35 is

a

prime

11. Find the probability that a number selected

at random from the numbers 1,2,3,4,..., 34, 35 is

a

multiple of 7

12. Find the probability that a number selected

at random from the numbers 1,2,3,4,..., 34, 35 is

a

divisible by 3 or 5.

13. A bag contains 6 red balls, 8 white balls, 5 green balls and 3 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn out from the bag is white

▶ View Text Solution

14. A bag contains 6 red balls, 8 white balls, 5 green balls and 3 black balls. One ball is drawn at random from the bag. Find the probability

that the ball drawn out from the bag is

red or black

15. A bag contains 6 red balls, 8 white balls, 5

green balls and 3 black balls. One ball is drawn

at random from the bag. Find the probability

that the ball drawn out from the bag is

not green

16. A bag contains 6 red balls, 8 white balls, 5 green balls and 3 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn out from the bag is neither white nor black

17. Two different dice are thrown together. Find the probability that the numbers obtained

have a sum less than 7

18. Two different dice are thrown together. Find the probability that the numbers obtained

have a product less than

19. Two different dice are thrown together. Find the probability that the numbers

obtained

is a doublet of odd numbers

20. A box contains 20 balls bearing numbers

from 1 to 20. A ball is drawn at random from

the box. Find the probability that the number

on the ball is

an odd number,

21. A box contains 20 balls bearing numbers from 1 to 20. A ball is drawn at random from the box. Find the probability that the number on the ball is

divisible by 2 or 3,

22. A box contains 20 balls bearing numbers from 1 to 20. A ball is drawn at random from the box. Find the probability that the number

on the ball is

not divisible by 10

23. A box contains 20 balls bearing numbers

from 1 to 20. A ball is drawn at random from

the box. Find the probability that the number

on the ball is

a prime number

24. A bag contains 6 black balls and some white balls. If the probability of drawing a white ball from the bag is double that of a black ball, find the number of white balls in the bag.

▶ **View Text Solution**

1. Assertion: In a cricket match a batsman hits a boundary 9 times out of 45 balls he plays.

The probability that in a given throw he does

not hit the boundary is 4 / 5.

Reason: P(E)+P(not E)=1

A. Both the Assertion and the Reason are

correct and the Reason is the correct

explanation of the Assertion.

B. The Assertion and the Reason are

correct but the Reason is not the correct

explanation of the Assertion.

C. Assertion is true but the Reason is false.

D. Assertion is false but the Reason is true.

Answer: A

▶ **View Text Solution**

2. Assertion: The probability of a sure event is 1.

Reason: Let E be an event. Then $0 \leq P(E) \leq 1$

A. Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

B. The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

C. Assertion is true but the Reason is false.

D. Assertion is false but the Reason is true.

Answer: B

▶ View Text Solution

3. Assertion: It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992, then the probability that the 2 students have the same birthday is 0.128.

Reason: If n(A)=1 and n(S)=13, then P(A)=1/3

A. Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

B. The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

C. Assertion is true but the Reason is false.

D. Assertion is false but the Reason is true.

Answer: D

▶ View Text Solution

Case Based Questions

1. One day, during games period four friends A, B, C and D planned to play game using numbers cards. They prepared 20 numbered cards with labelled 1 to 20 and then they put all the number cards in the empty chalk box available in the classroom. In this game, every friend was asked to pick the card randomly and after each drawn, card was replaced back in the chalk box.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

The probability, first boy pick the card and he get the card with an even number is:

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

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

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

D. $\dfrac{1}{8}$

Answer: B

▶ **View Text Solution**

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2. One day, during games period four friends A, B, C and D planned to play game using numbers cards. They prepared 20 numbered cards with labelled 1 to 20 and then they put all the number cards in the empty chalk box available in the classroom. In this game, every friend was asked to pick the card randomly and after each drawn, card was replaced back

in the chalk box.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
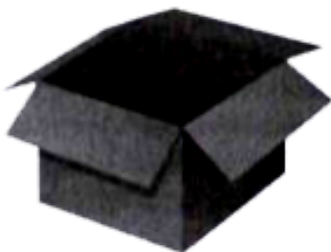
If the card drawn in first case is replaced and

the second boy draws a card. What is the

probability of getting a prime number?

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

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

C. $\dfrac{7}{8}$

D. $\dfrac{9}{11}$

Answer: A

▶ **View Text Solution**

3. One day, during games period four friends A, B, C and D planned to play game using numbers cards. They prepared 20 numbered cards with labelled 1 to 20 and then they put all the number cards in the empty chalk box

available in the classroom. In this game, every friend was asked to pick the card randomly and after each drawn, card was replaced back in the chalk box.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

If the card drawn, is not replaced in the second drawn, the probability that he got a multiple of 3 greater than 4 is:

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

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

C. $\dfrac{6}{19}$

D. $\dfrac{5}{19}$

Answer: D

▶ **View Text Solution**

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4. One day, during games period four friends A, B, C and D planned to play game using numbers cards. They prepared 20 numbered

cards with labelled 1 to 20 and then they put all the number cards in the empty chalk box available in the classroom. In this game, every friend was asked to pick the card randomly and after each drawn, card was replaced back in the chalk box.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

For a sure event A, P(A) = ?

A. 1

B. 0

C. -1

D. 2

Answer: A

▶ **View Text Solution**

5. One day, during games period four friends A, B, C and D planned to play game using numbers cards. They prepared 20 numbered

cards with labelled 1 to 20 and then they put

all the number cards in the empty chalk box

available in the classroom. In this game, every

friend was asked to pick the card randomly

and after each drawn, card was replaced back

in the chalk box.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

If all cards drawn are replaced then the probability of getting a multiple of 3 and 5 is:

A. $\dfrac{1}{2}$
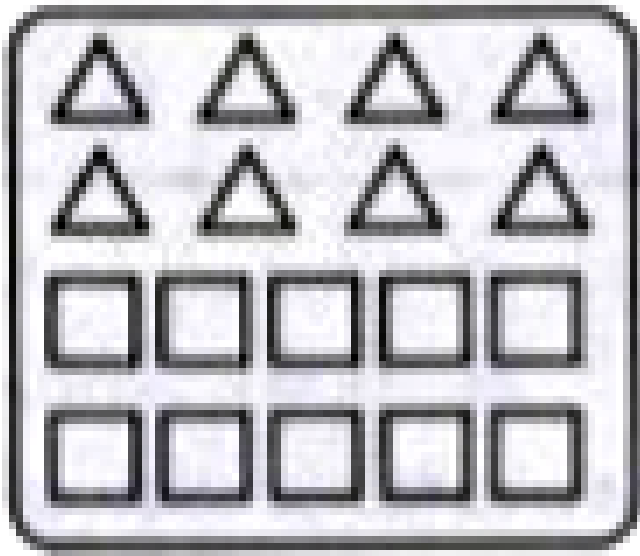
B. $\dfrac{1}{5}$

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

D. $\dfrac{1}{18}$

Answer: C

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6. Aditya went to shop to purchase a child's game along with his friend. He selected one child's game which had 8 triangles out of which 3 are blue and rest are red and 10 squares of which 6 are blue and rest are red. While checking the game, one piece is lost at random.
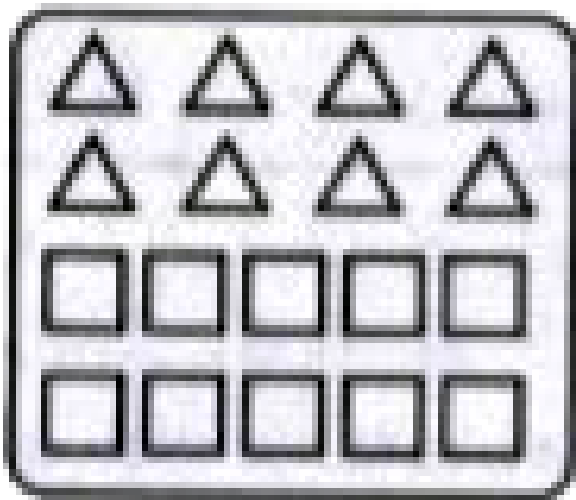
How many triangles are of red colour and how many squares are of red colour?

A. 5,4

B. 5,5

C. 4,5

D. 8,6

Answer: A

▶ View Text Solution

7. Aditya went to shop to purchase a child's game along with his friend. He selected one child's game which had 8 triangles out of which 3 are blue and rest are red and 10 squares of which 6 are blue and rest are red. While checking the game, one piece is lost at random.
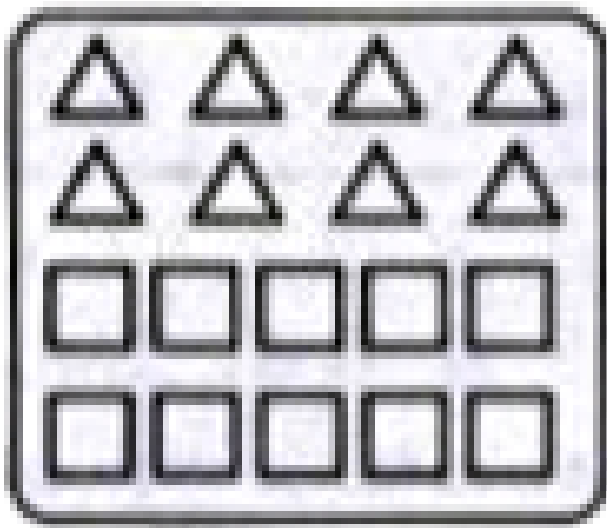
Find the probability that lost piece is square

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

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

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

D. $\dfrac{5}{18}$

Answer: B

8. Aditya went to shop to purchase a child's game along with his friend. He selected one child's game which had 8 triangles out of which 3 are blue and rest are red and 10 squares of which 6 are blue and rest are red. While checking the game, one piece is lost at random.
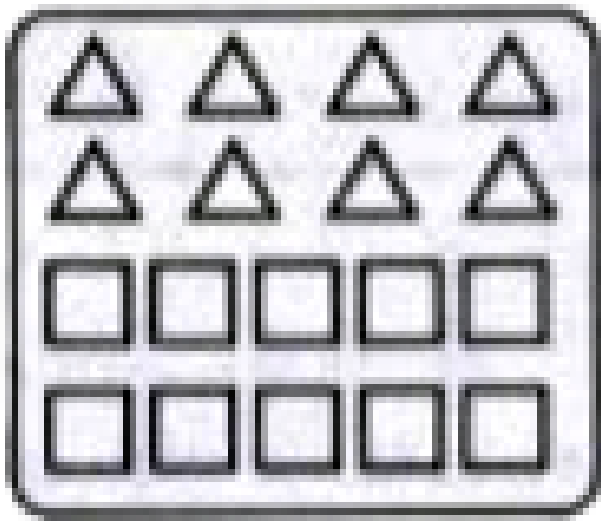
Find the probability that lost piece is triangle:

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

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

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

D. $\dfrac{5}{18}$

Answer: A

9. Aditya went to shop to purchase a child's game along with his friend. He selected one child's game which had 8 triangles out of which 3 are blue and rest are red and 10 squares of which 6 are blue and rest are red. While checking the game, one piece is lost at random.

Find the probability that lost piece is square

of blue colour:

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

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

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

D. $\dfrac{5}{18}$

Answer: C

10. Aditya went to shop to purchase a child's game along with his friend. He selected one child's game which had 8 triangles out of which 3 are blue and rest are red and 10 squares of which 6 are blue and rest are red. While checking the game, one piece is lost at random.
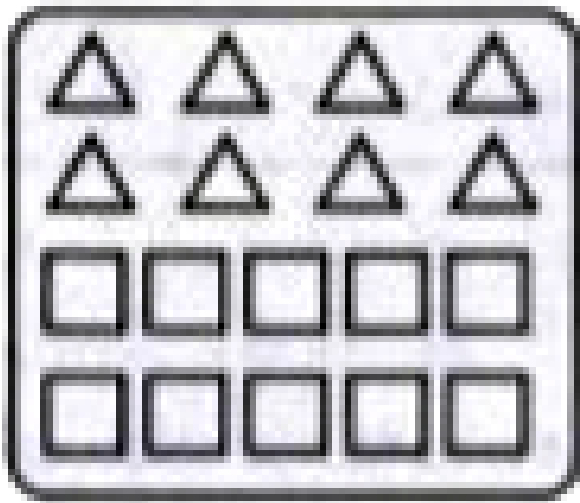
Find the probability that lost piece is triangle of red colour:

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

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

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

D. $\dfrac{5}{18}$

Answer: D

11. Rishank and Riyank are best friends. They stay in the same colony. Both studies in the same class and in the same school. During winter vacation Rishank visited Riyank's house to play Ludo. They decided to play Ludo with 2 dice.

To win a game, Rishank wanted a total of 7.

what is the probability of winning a game by

Rishank?

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

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

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

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

Answer: A

▶ View Text Solution

12. Rishank and Riyank are best friends. They stay in the same colony. Both studies in the same class and in the same school. During winter vacation Rishank visited Riyank's house to play Ludo. They decided to play Ludo with 2 dice.

To win a game, Riyank wanted a total of 8 as the sum. What is the probability of winning a game by Riyank?

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

B. $\dfrac{5}{36}$

C. $\dfrac{7}{36}$

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

Answer: C

▶ View Text Solution

13. Rishank and Riyank are best friends. They stay in the same colony. Both studies in the same class and in the same school. During winter vacation Rishank visited Riyank's house to play Ludo. They decided to play Ludo with 2

dice.

The probability that the sum of the numbers on the both the dice is divisible by 10 is:

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

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

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

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

Answer: A

14. Rishank and Riyank are best friends. They stay in the same colony. Both studies in the same class and in the same school. During winter vacation Rishank visited Riyank's house to play Ludo. They decided to play Ludo with 2 dice.

What is the probability that the sum of the number on both the dice is divisible by 4 or 6?

A. $\dfrac{7}{18}$

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

C. $\dfrac{7}{15}$

D. $\dfrac{2}{9}$

Answer: A

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15. Rishank and Riyank are best friends. They stay in the same colony. Both studies in the same class and in the same school. During winter vacation Rishank visited Riyank's house to play Ludo. They decided to play Ludo with 2 dice.

The probability that 5 will come up at least in die is:

A. $\dfrac{7}{36}$

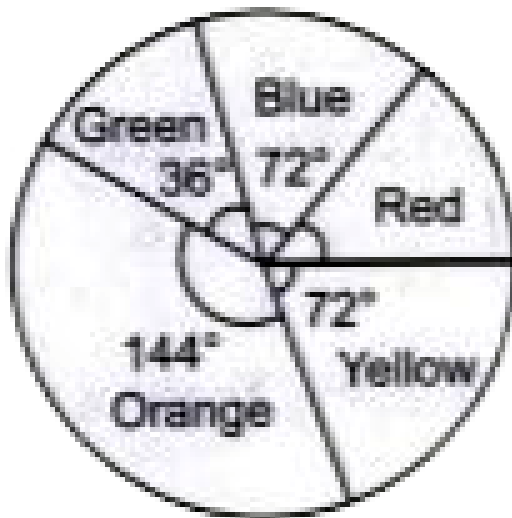B. $\dfrac{11}{36}$

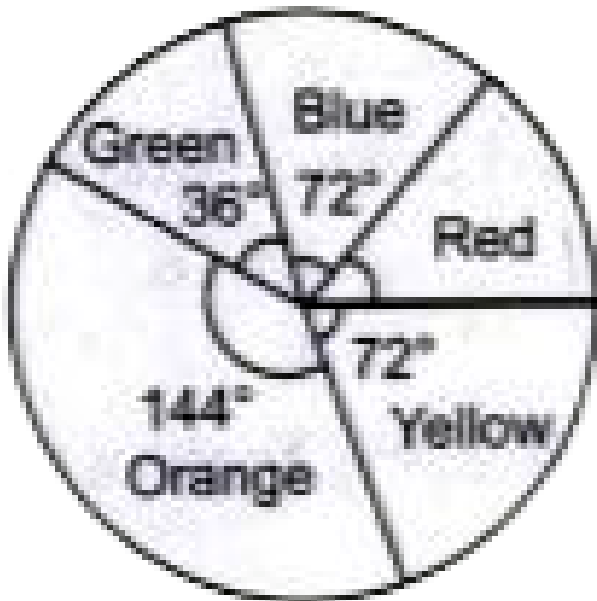C. $\dfrac{25}{36}$

D. $\dfrac{2}{9}$

Answer: B

▶ View Text Solution

16. A survey was taken at a high school and the results were put in a circular graph. The students were asked to list their favourite is shown. If a person is chosen at random from the school find the probability of each response.
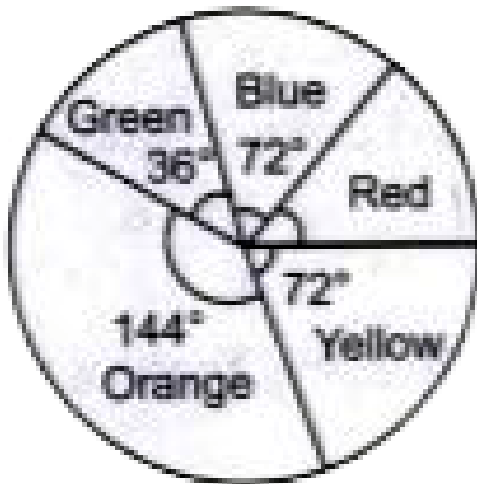
The probability of favourite colour being red is:

A. 0.1

B. 0.2

C. 0.3

D. 0.4

Answer: A

▶ View Text Solution

17. A survey was taken at a high school and the results were put in a circular graph. The students were asked to list their favourite is shown. If a person is chosen at random from the school find the probability of each response.
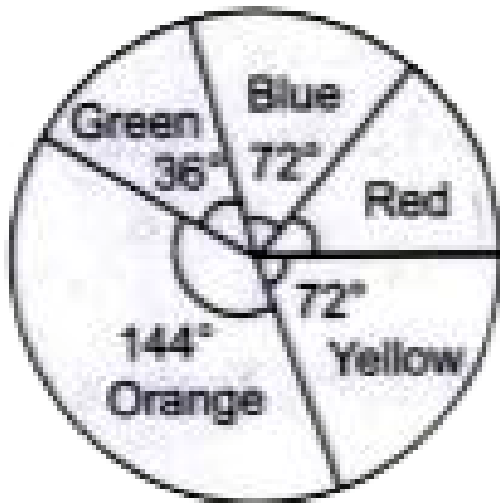
The probability of favourite colour being blue or green is:

A. 0.1

B. 0.2

C. 0.3

D. 0.4

Answer: B

▶ View Text Solution

18. A survey was taken at a high school and the results were put in a circular graph. The students were asked to list their favourite is shown. If a person is chosen at random from the school find the probability of each response.

The probability of favourite colour not being red or blue is:

A. 0.35

B. 0.7

C. 0.15

D. 0.5

Answer: B

▶ View Text Solution

19. A survey was taken at a high school and the results were put in a circular graph. The students were asked to list their favourite is shown. If a person is chosen at random from the school find the probability of each response.

The probability of favourite colour not being orange or green?

A. 0.65

B. 0.75

C. 0.25

D. 0.5

Answer: D

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20. A survey was taken at a high school and the results were put in a circular graph. The students were asked to list their favourite is shown. If a person is chosen at random from the school find the probability of each response.
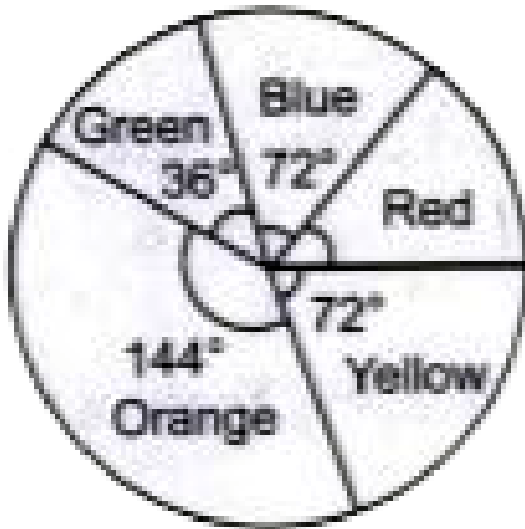
The probability of favourite colour being red or blue is

A. 0.2

B. 0.3

C. 0.1

D. 0.4

Answer: B
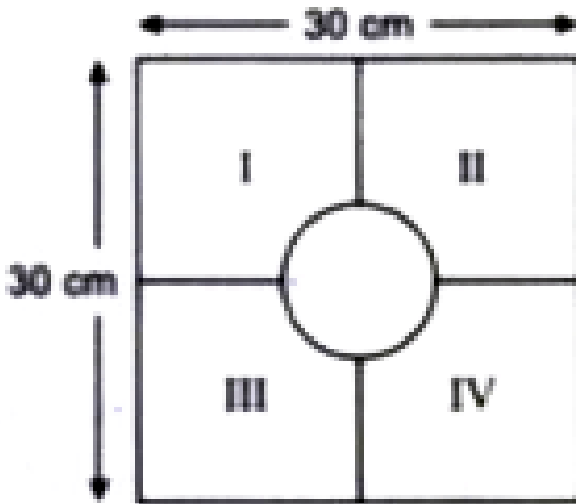
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Passage Based Questions

1. In a game at a fair the entry fee is of ₹ 10. The game consists of tossing a coin 3 times. If it shows one or two heads, Pooja will get her entry fee back. If she throws 3 heads, she will get double the amount of entry fee, other-wise she will lose.

For tossing a coin three times, find the probability that she loses the entry fee

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2. In a game at a fair the entry fee is of ₹ 10. The game consists of tossing a coin 3 times. If it shows one or two heads, Pooja will get her entry fee back. If she throws 3 heads, she will get double the amount of entry fee, other-wise she will lose.

For tossing a coin three times, find the probability that she

gets double entry fee

3. In a game at a fair the entry fee is of ₹ 10. The game consists of tossing a coin 3 times. If it shows one or two heads, Pooja will get her entry fee back. If she throws 3 heads, she will get double the amount of entry fee, other-wise she will lose.

For tossing a coin three times, find the probability that she

just gets her entry fee back.

4. Raju was playing ludo with his sister. Everytime, he throws a die, it always landed on the board and the ludo pieces get displaced from their positions. So, his sister scolded him and told him to throw the die on the circular part of the board only.


Based on the given situation and the following figure, answer the questions.

If the diameter of the circular portion is 14 cm, what is the probability that die will land inside the circular portion ?

5. Raju was playing ludo with his sister. Everytime, he throws a die, it always landed on the board and the ludo pieces get displaced from their positions. So, his sister scolded him and told him to throw the die on the circular part of the board only.
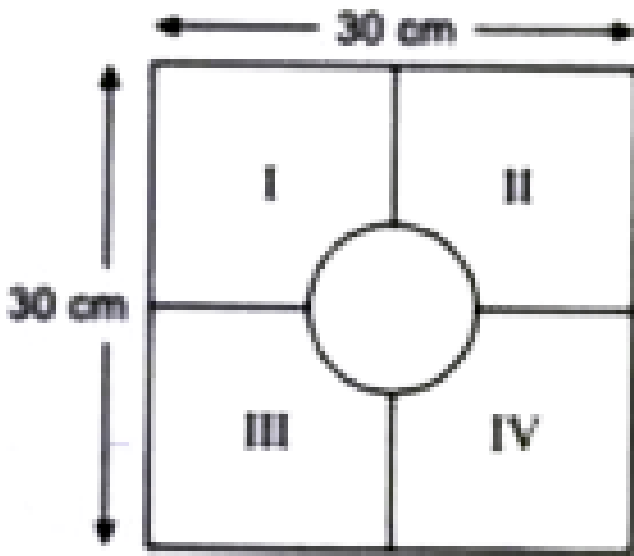
Based on the given situation and the following figure, answer the questions.

What is the probability of getting a prime number on a single throw of a die?

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6. In a class, there are 20 girls and 18 boys. The class teacher wants to choose one student for class monitor and she don't want to be partial. So, she writes the name of each student on a card and puts them into a basket and mixes them thoroughly. A child is asked to pick one card from the basket.
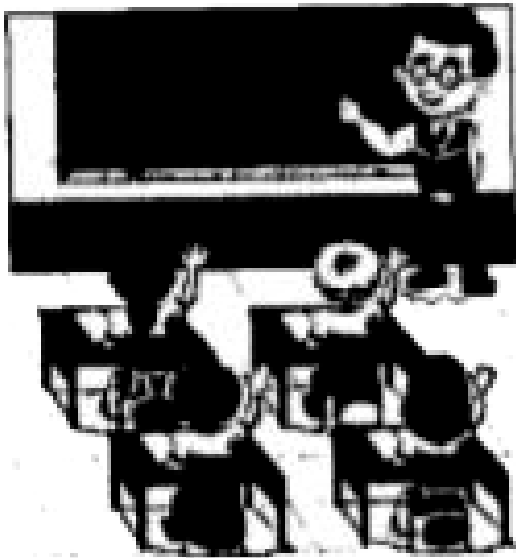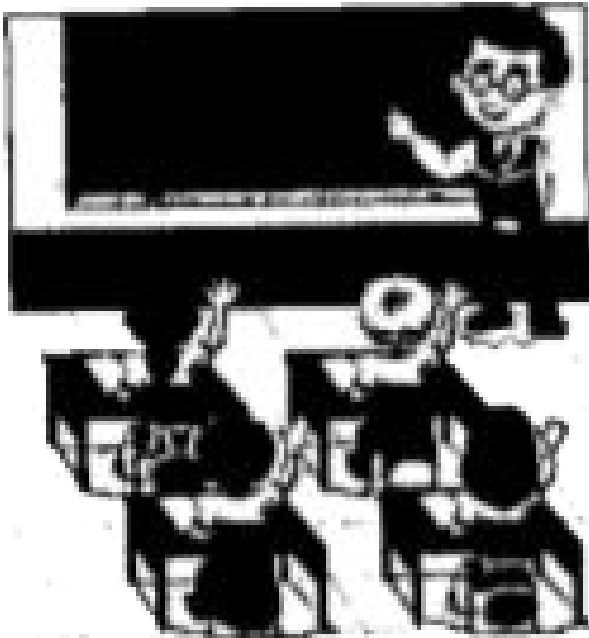
What is the probability, the name written on the card is the name of a girl?

▶ View Text Solution

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7. In a class, there are 20 girls and 18 boys. The class teacher wants to choose one student for

class monitor and she don't want to be partial. So, she writes the name of each student on a card and puts them into a basket and mixes them thoroughly. A child is asked to pick one card from the basket.
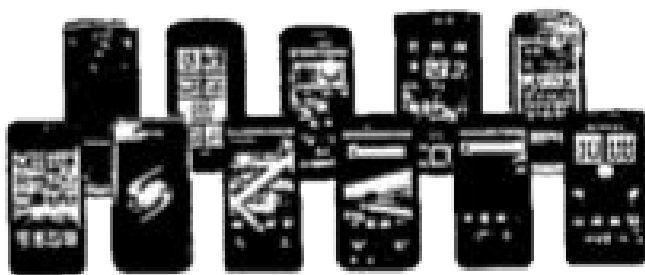

What is the probability, the name written on the card is the name of a boy?

8. A lot consists of 50 mobile phones of which 44 are good, 3 have only minor defects and 3 have major defects. Vanshika will buy a phone if it is good but the trader will only buy a mobile if it has no major defect. One phone is selected at random from the lot.

What is the probability that it is acceptable to

Vanshika?

9. A lot consists of 50 mobile phones of which

44 are good, 3 have only minor defects and 3

have major defects. Vanshika will buy a phone

if it is good but the trader will only buy a

mobile if it has no major defect. One phone is
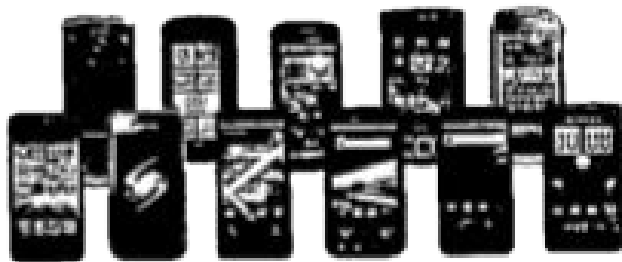
selected at random from the lot.

What is the probability that it is acceptable to trader?

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10. A lot consists of 50 mobile phones of which 44 are good, 3 have only minor defects and 3 have major defects. Vanshika will buy a phone if it is good but the trader will only buy a mobile if it has no major defect. One phone is

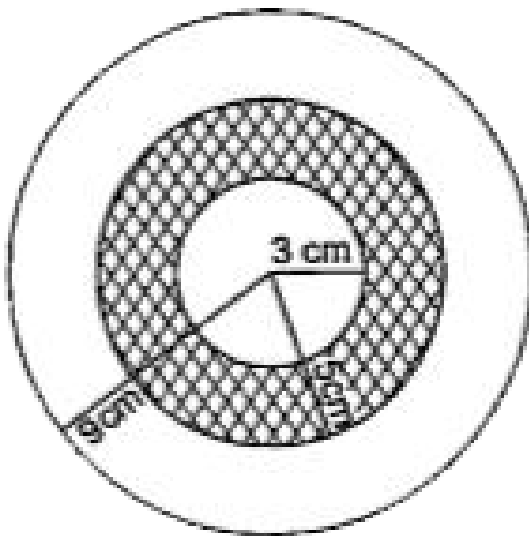selected at random from the lot.

What is the probability that it is neither acceptable to trader nor to Vanshika?

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11. A target game consist of three concentric circles of radii 3 cm, 5 cm and 9 cm respectively. A region, and gets a second
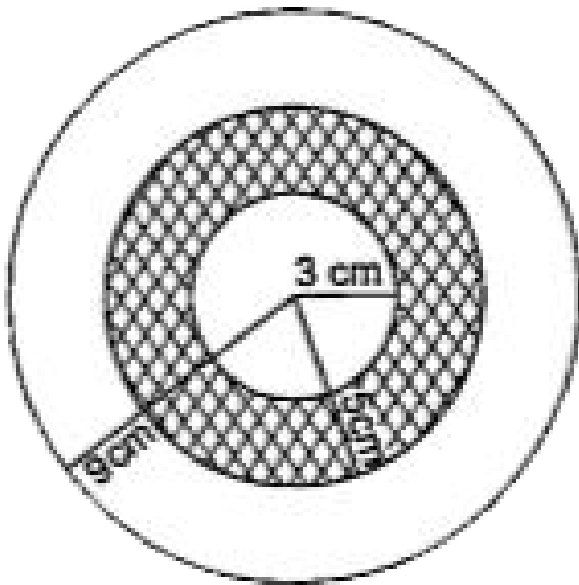
chance if dart hits the inner most circle. And loses the game if dart hits the outer most circle.

What is the probability that a person will win the game?

12. A target game consist of three concentric circles of radii 3 cm, 5 cm and 9 cm respectively. A region, and gets a second chance if dart hits the inner most circle. And loses the game if dart hits the outer most circle.

What is the probability that a person will get the second chance?

13. A target game consist of three concentric circles of radii 3 cm, 5 cm and 9 cm respectively. A region, and gets a second chance if dart hits the inner most circle. And loses the game if dart hits the outer most circle.
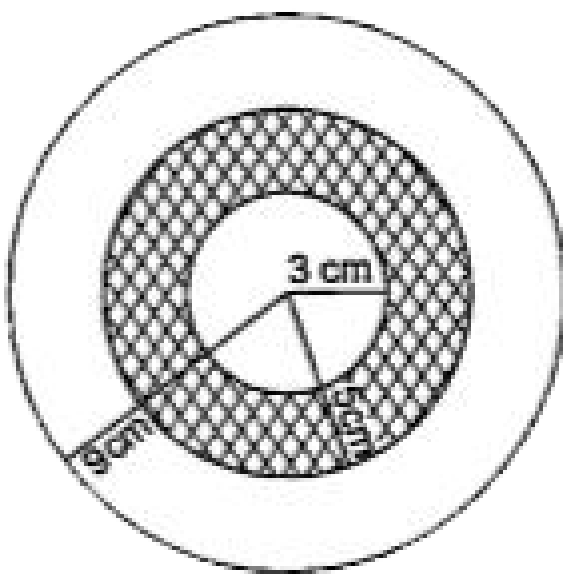
What is the probability that a person will loose the game?

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Self Assessment

1. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball from the bag is double that of a red ball, find the number of blue balls in the bag.

2. A bag contains 12 balls out of which x are white. If one ball is drawn at random what is the probability that it will be white ? If six more white balls are put in the bag the

probability of drawing a white ball doubles.

Find x.

3. A child has a block in the shape of a cube with a letter written on each face (A, B, C, D, E, A).The cube is thrown once. What is the probability of getting

an A

4. A child has a block in the shape of a cube with a letter written on each face (A, B, C, D, E, A).The cube is thrown once. What is the probability of getting

a D

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5. There are 40 students in Class X of a school of whom 25 are girls and 15 are boys. The class teacher, in order to select a class representative, writes down the names of all

representative, writes down the names of all

the students on same-sized pieces of cardboard and puts them in a box. Before drawing out a name, she stirs it well. What is the probability of the name being that of a girl's

6. There are 40 students in Class X of a school of whom 25 are girls and 15 are boys. The class teacher, in order to select a class representative, writes down the names of all

the students on same-sized pieces of cardboard and puts them in a box. Before drawing out a name, she stirs it well. What is the probability of the name being that of a a boy's

7. A carton consists of 100 shirts of which, 88 are good, 8 have minor defects and 4 have major defects. Jimmy, a trader will accept only the good shirts but Sujatha another trader

will reject only the shirts with major defects.
One shirt is drawn at random from the carton.
What is the probability that it is acceptable to
Jimmy

8. A carton consists of 100 shirts of which, 88
are good, 8 have minor defects and 4 have
major defects. Jimmy, a trader will accept only
the good shirts but Sujatha another trader
will reject only the shirts with major defects.

One shirt is drawn at random from the carton. What is the probability that it is acceptable to to Sujatha?

9. Gopi buys a fish from a shop for his aquarium. The shopkeeper picks one at random from a tank containing 8 female fish and 5 male fish. What is the probability that the fish taken out is a male fish?

10. A jar contains 24 marbles of which some are green and the rest are blue. If a marble is drawn at random from the jar, the probability that it is green is $\dfrac{2}{3}$. Find the number of blue marbles in 2 the jar.

11. A die is thrown. Find the probability of getting

a prime number

12. A die is thrown. Find the probability of

getting

an even prime number

13. A die is thrown. Find the probability of

getting

a number greater than 5

14. A die is thrown. Find the probability of getting

a number lying between 2 and 6.

15. One card is drawn from a well-shuffled deck

of 52 cards. Find the probability of getting

a red king,

16. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a face card

17. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a red face card

18. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a black queen

19. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a jack of hearts

20. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a spade

21. A bag contains 3 red and 5 black balls. A ball probability that the ball is red

22. A bag contains 3 red and 5 black balls. A ball probability that the ball is black?

23. Two customers are visiting a particular shop in the same week (Monday to Saturday). Each is equally likely to visit the shop on any day as on another. What is the probability that

both will visit the shop on

the same day,

24. Two customers are visiting a particular shop in the same week (Monday to Saturday). Each is equally likely to visit the shop on any day as on another. What is the probability that both will visit the shop on

on different days

25. Two customers are visiting a particular shop in the same week (Monday to Saturday). Each is equally likely to visit the shop on any day as on another. What is the probability that both will visit the shop on

on consecutive days?

▶ View Text Solution

26. It is given that in a group of 3 students, the probability of 2 students not having the same

birthday is 0.992. What is the probability that the 2 students have the same birthday?

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27. A lot of 20 electric bulbs contains 4 defective bulbs. One bulb is taken out at random from the box. What is the probability that the bulb drawn is defective?

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28. Suppose the bulb is not defective and not replaced and another bulb is drawn from the lot, what is the probability that the second bulb is also not defective?

▶ View Text Solution

29. A box contains 90 discs that are numbered from 1 to 90. If a disc is drawn at a random from the box, find the probability that it bears a two-digit number

30. A box contains 90 discs that are numbered

from 1 to 90. If a disc is drawn at a random

from the box, find the probability that it bears

a perfect square number

31. A box contains 90 discs that are numbered

from 1 to 90. If a disc is drawn at a random

from the box, find the probability that it bears a number divisible by 5.

32. A lot consists of 144 ball pens of which 20 are defective and others are good. Nuri will buy a pen if it is good but will not buy one if it is defective. The shopkeeper draws one pen at a random and gives it to her. Find the probability of Nuri's buying and not buying it.

33. A lot consists of 144 pens of which 12 are defective and others are good. One pen is drawn out at random. Find the probability of the pen being a good one.

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34. An unbiased die is thrown. What is the probability of getting

a multiple of 3

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35. An unbiased die is thrown. What is the

probability of getting

an even number or a multiple of 3

36. An unbiased die is thrown. What is the

probability of getting

an odd number?

37. A box contains 4 green, 8 white and 5 red marbles. If a marble is drawn out at random from the box, what is the probability that it will be

red

38. A box contains 4 green, 8 white and 5 red marbles. If a marble is drawn out at random from the box, what is the probability that it

will be

white

39. A box contains 4 green, 8 white and 5 red marbles. If a marble is drawn out at random from the box, what is the probability that it will be

not green marble?

40. What is the probability of having 53 sundays in a leap year?

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41. Two dice are thrown together. What is the probability of having one number being twice the other?

▶ View Text Solution

42. Two dice are thrown together. What is probability of having a difference of 3 between the two numbers?

▶ **View Text Solution**

43. Two dice are thrown together. What is the probability of having a product of 6 between the two numbers?

▶ **View Text Solution**

44. A card is drawn from a deck of 52 cards. What is the probability of drawing a red king or a black jack?

45. From a deck of 52 cards the face cards are removed and they are replaced by two jokers and two blank cards. What is the probability of drawing a joker or a blank card?

46. For a game, the entry fee is 5. The game consists of tossing a coin three times. If one or two heads show up then Shweta gets back her entry free. If she tosses three heads, she receives double the entry fee or else she loses. After tossing the coin thrice, find the probabilities that she

loses the entry fee

▶ View Text Solution

47. For a game, the entry fee is 5. The game consists of tossing a coin three times. If one or two heads show up then Shweta gets back her entry free. If she tosses three heads, she receives double the entry fee or else she loses. After tossing the coin thrice, find the probabilities that she

gets double the entry fee

48. For a game, the entry fee is 5. The game consists of tossing a coin three times. If one or two heads show up then Shweta gets back her entry free. If she tosses three heads, she receives double the entry fee or else she loses. After tossing the coin thrice, find the probabilities that she

gets her entry free back

49. A die has six faces marked as 0, 1, 1, 1, 6, 6.

Two such dices are thrown together and the total score is recorded.

How many different scores are possible?

50. A die has six faces marked as 0, 1, 1, 1, 6, 6.

Two such dices are thrown together and the total score is recorded.

What is the probability of getting a total of 7 ?

51. A bag contains white, black and red balls only. A ball is drawn at random from the bag. The probability of getting a white ball is $\frac{3}{10}$, and that of a black ball is $\frac{2}{5}$ Find the probability of getting a red ball if the bag contains 20 black balls. Also find the total number of balls.

52. A bag contains 24 balls of which x are red, 2x are white and 3x are blue. A ball is selected at random. What is the probability that the ball drawn is

not white

53. A bag contains 24 balls of which x are red, 2x are white and 3x are blue. A ball is selected at random. What is the probability that the

ball drawn is

blue

54. The probability of guessing the correct answer to a certain test is $\dfrac{P}{12}$. If the probability of not guessing the correct answer to this question is $\dfrac{1}{3}$. Find the value of P.

55. A number is selected at random from the numbers 3, 5, 5, 7, 7, 7, 9, 9, 9, 9. Find the probability that the selected number is their average.

56. If 65% of the population has black eyes, 25% have brown eyes and the remaining have blue eyes, what is the probability that a

person selected at random has

blue eyes

57. If 65% of the population has black eyes, 25% have brown eyes and the remaining have blue eyes, what is the probability that a person selected at random has

brown or black eyes

58. If 65% of the population has black eyes, 25% have brown eyes and the remaining have blue eyes, what is the probability that a person selected at random has

blue or black eyes

▶ **View Text Solution**

59. If 65% of the population has black eyes, 25% have brown eyes and the remaining have blue eyes, what is the probability that a

person selected at random has

neither blue nor brown eyes?

▶ **View Text Solution**

60. If a number x is chosen from the sequence

1, 2, 3 and a number y is chosen from the

sequence 1, 4,9, find the probability that xy will

be less than 9?

▶ **View Text Solution**

61. A jar contains 54 marbles each of which is blue, green or white. The probability of selecting a blue marble at random is $\frac{1}{3}$ and the probability of selecting a green marble at random is $\frac{4}{9}$. How many white marbles does the jar contain?

62. In a game of musical chair, the person playing the music has been asked to stop the

music within 2 minutes. What is the probability that she would stop the music within the first half minute?

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63. What is the probability that the month of june will have 5 Mondays in a

Leap Year

▶ View Text Solution

64. What is the probability that the month of june will have 5 Mondays in a non-Leap Year?

▶ View Text Solution

65. What is the probability that the month of February will have 5 wednesdays in a Leap year

▶ View Text Solution

66. A number x is chosen from the numbers - 4, -3-2,-1,0, 1, 2, 3, 4. Find the probability that x < 3.