



MATHS

BOOKS - TARGET PUBLICATION

PROBABILITY



1. If a die is thrown, then find the probability of

getting a composite number on the upper face.



:

1. For each of the following experiments, write the sample space S and the number of sample points n(S)

(1) One coin and one die are thrown simultaneously.

(2) Two-digit numbers are formed using digits 2,3 and

5 without repeating the digits.

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2. The arrow is rotated and it stops randomly on the disc. Find out on which colour it may stop.



3. In the month of March 2019, find the days on which

the date is a multiple of 5.





4. Write sample space S: Form a 'Road safety committee' of two, from 2 boys (B1, B2) and 2 girls (G1, G2).



1. Write sample space 'S' and number of sample points 'n(S)'. Also write events A, B, C in the set form and write n(A), n(B), n(C) : One die is rolled, Event A: Even number on the upper face. Event B: Odd number on the upper face. Event C: Prime number on the upper face.

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Practice Set 5 4

1. If two coins are tossed, find the probability of the following events: (i) Getting atleast one head (ii) Getting no head.

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2. If two dice are rolled simultaneously, find the probability of the following events.(i) The sum of the digits on the upper faces is at least 10. (ii)The sum of the digits on the upper face is 33. (iii)The digit on the first die is greater than the digit on second die.



3. There are 15 tickets in a box, each bearing one of the numbers from 1 to 15. One ticket is drawn at random from the box. Find the probability of event that the ticket drawn: (i) shows an even number (ii) shows a number which is a multiple of 5.

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4. A two digit number is formed with digits 2,3,5,7,9 without repetition. What is the probability that the number formed is: (i) an odd number? (ii) a multiple of 5?

5. A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is (i) Ace. (ii) Spade.



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Problem Set 5

1. Which number cannot represent a probability? a) $\frac{2}{3}$ b)1.5 c)0.15 d)0.7

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

 $B.\,1.5$

C. 0.15

 $\mathsf{D}.\,0.7$

Answer: B

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2. A die is rolled. What is the probability that the number appearing on upper face is less than 3? a) $\frac{1}{6}$ b) $\frac{1}{3}$ c) $\frac{1}{2}$ d)0

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

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

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

D. 0

Answer: B



3. What is the probability of the event that a number chosen from 1 to 100 is a prime number? a) $\frac{1}{5}$ b) $\frac{1}{4}$ c) $\frac{2}{3}$ d) $\frac{2}{7}$ A. $\frac{1}{5}$ B. $\frac{6}{25}$ C. $\frac{1}{4}$

Answer: C

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4. There are 40 cards in a bag. Each bears a number from 1 to 40. One card is drawn at random. What is the probability that the card bears a number which is a multiple of 5? a) $\frac{1}{5}$ b) $\frac{3}{5}$ c) $\frac{4}{5}$ d) $\frac{1}{3}$

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

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

Answer: A

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5. Basketball players John, Vasim, Akash were practicing the ball drop in the basket. The probabilities of success for John, Vasim and Akash are 4/5, 0.83 and 58% respectively. Who had the greatest probability of success?



6. In a hockey team there are 6 defenders, 4 offenders and 1 goalee. Out of these, one player is to be selected randomly as a captain. Find the probability of the selection that: (i) The goalee will be selected (ii) A defender will be selected.

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7. Joseph kept 26 cards in a cap,bearing one english alphabet on each card.One card is drawn at random.What is the probability that the card drawn is a vowel card?



8. A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random to give it to Pranali. What is the probability of the event that Pranali gets: (i) a red balloon (ii) a blue balloon (iii) a green balloon.



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9. A box contains 5 red, 8 blue and 3 green pens. Rujuta wants to pick a pen at random. What is the probability that the pen is blue?

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10. Six faces of a die are as shown below

If the die is rolled once, find the probability of

i. 'A' appears on upper face.

ii. 'D' appears on upper face.



11. A box contains 30 tickets, bearing only one number from 1 to 30 on each. If one ticket is drawn at random, Find the probability of an event that the

ticket drawn bears (i)an odd number.(ii)a complete

square number.



12. Length and Breadth of a rectangular garden are 77m and 50 m.There is a circular lake in the garden having diameter 14m.Due to wind, a towel from a terrace on a nearby building fell into the garden.Then find the probability of the event that it fell in the lake.



13. In a game of chance, a spining arrow comes to rest at one of the numbers

1,2,3,4,5,6,7,8,

All these are equally likely outcomes.



Find the probability that it will rest at



14. There are six cards in a box, each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows: (i) a natural number (ii) a number less than 1 (iii) a whole number (iv) a number greater than 5.



15. A bag contains 3 red ,3 white and 3 green balls. One ball is taken out of the bag at random. What is the probability that the ball drawn is (i) red (ii) not red (iii) either red or white.



16. Each card bears one letter from the word 'mathematics'. The cards are placed on the table upside down. Find the probability that a card drawn bears the letter 'm'.

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

B. 1.5
C. 0.15

D.0.7



17. Out of 200 studenst from a school,135 like kabbaddi and the remaining students do not like the game.If one student is selected at random from all the students,find the probability that the student selected doesn't like kabbaddi.

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

 $B.\,1.5$

C. 0.15

 $\mathsf{D}.\,0.7$



18. A two digit number is formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a: (i) prime number (ii) multiple of 4 (iii) multiple of 11.

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

 $B.\,1.5$

C. 0.15

 $\mathsf{D}.\,0.7$



19. The faces of a die bear numbers 0,1,2,3,4,5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.

A. $\frac{2}{3}$ B. 1.5 C. 0.15

 $\mathsf{D}.\,0.7$



- 1. If two digit number are formed using the digits 0, 1,
- 2, 3, 4, 5 with repeating them, then n(S) =

A. (a) 25

B. (b) 35

C. (c) 30

D. (d) 40

Answer: C

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2. There are 4 boys and 3 girls. If group of two is to

be formed , then

the number of sample points are

A. (a) 25

B. (b) 35

C. (c) 30

D. (d) 40

Answer: C



3. Two unbiased coins are tossed. What is the probability of getting at most one head?
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4. A die is thrown. Find the probability of getting: a

prime number.

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5. Two dice are thrown . The probability of getting sum of the numbers on their upper faces at most 4 is

6. A bookshelf contains 40 books marked with numbers 1 to 40 . If one book is drawn from this shelf at random, then the probability that the number on the book is a perfect square is

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7. If a card is drawn from a well shuffled pack of 52

cards, then the probability that is a queen card is

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8. From a well shuffled pack of 52 cards, one card is drawn at random. What is the probability that it is a number card ?

A. 25

B.35

C. 30

D. 40

Answer: C



1. How many possibilites are there is each of the following ?

A date from 1 to 15 in the month of March is randomly selected .

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2. How many possibilites are there is each of the following ?

A letter form word 'geography' is selected randomly.

3. How many possibilites are there is each of the following ?

List of games played in school is given. Students has

to select any

one of the games.

Kho-Kho, Cricket, Football, Kabaddi, Table tennis.

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Based On Practice Set 5 2

1. For the following experiment write sample space 'S'

and number of sample points n(S).

Two digit number are formed from the digits 1, 3 and

7 where the digits are repeated .

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2. In the month of January 2019, find the days on

which the date is a multiple of 6.

		Jai	uary	2019		* *
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



3. Form a 'committee' of two , from 3 men (M_1, M_2, M_3) and 2 women (W_1, W_2) . Complete the following activity to write the sample space. (i) Committee of three men $= \Box, \Box, \Box$ (ii) Committee of two women =(iii) Committee of one man and one women $\{M_1W_1, \Box \Box, \Box \Box, \Box \Box, \Box \Box, \Box \Box, \Box \Box\}$: Sampe space = _, __ _, __ _, __ _, __ _, __ _, __ _,]



Based On Practice Set 5 3

1. A die is thrown. If A is an event of getting an odd number then write

the sample space and event A in set notation.



2. A die is thrown, then write the sample space (S) and number of

sample points n(S) and also write event A of getting

numbers

multiple of 3 on the upper face and write n(A).



3. Two coins are tossed simultaneously . Write the sample space (S),

n(S), the following event A using set notation and

n(A), where 'A is

the event of getting at least one head .



4. Two coins are tossed simultaneoulsy. Write the sample space (S)

and number of sample points n(S) . Also write the

following events

in the set form and write the number of sample points in each

event. Condition for event A : to get at least one tail.



5. Two coins are tossed simultaneoulsy. Write the sample space (S) and number of sample points n(S) . Also write the

following events

in the set form and write the number of sample

points in each event

Condition for event B : to get only one head.

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6. Two coins are tossed simultaneously. Write the sample space (S)

and number of sample points n(S) . Also write the

following events

in the set form and write the number of sample points in each event

Condition for event C : to get at most one tail



7. Two coins are tossed simultaneously. Write the sample space (S)

and number of sample points n(S) . Also write the

following events

in the set form and write the number of sample

points in each event

Condition for event D : to get no head.



Based On Practice Set 53
1. A box contains 20 cards marked with numbers 1 to

20. One card is drawn at random. Write the event A

using the number on the card

is multiple of 4. Write S, n(S), A and n(A).



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2. There are 30 tickets numbered from 1 to 30 in a box and a ticket is drawn at random. If A is the event that the number on the ticket is a perfect square, then write the sample space S, n(S), the event A and n(A).



3. A beg contains 50 cards . Each card bears only one number from

1 to 50 . One card is drawn at random from the beg . Write the

sample space. Also write the events A, B and find the

number of sample points in them.

Condition for event A : the number on the card is

divisible by 6.



4. A beg contains 50 cards . Each card bears only one number from

1 to 50 . One card is drawn at random from the beg . Write the

sample space. Also write the events A, B and find the

number of sample points in them.

Condition for event B : the number on the card is a

complete square.

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5. A sanitation committee of 2 members is to be formed form 3 boys

and 2 girls . Write sample space 'S' and number of sample points

n(s). Also write the following events in set form and

number of

sample points in the event

Condition for event A : at least one girl must be a

member of the committee.

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6. A sanitation committee of 2 members is to be formed form 3 boys and 2 girls . Write sample space 'S' and number of

sample points

n(s). Also write the following events in set form and

number of

sample points in the event

Condition for event B : Committee must be of one

boy one girl .



7. A sanitation committee of 2 members is to be formed form 3 boysand 2 girls . Write sample space 'S' and number of sample points

n(s). Also write the following events in set form and number of

sample points in the event

Condition for event C : Committee must be of boys

only.

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8. A sanitation committee of 2 members is to be formed form 3 boys and 2 girls . Write sample space 'S' and number of sample points n(s). Also write the following events in set form and number of sample points in the event

Condition for event D : At the most one girl should

be a member

of the committee.



9. Write sample space 'S' and number of sample point n(S) for each of

the following experiments. Also write events P, Q, R in

the set form

and write n(P), n(Q), n(R).

Two coins are tossed simultaneoulsy . Condition for

event P : To get head on both coins . Conditon for

event Q : To get tail on first coins.

10. Write sample space 'S' and number of sample point n(S) for each of

the following experiments. Also write events P, Q, R in

the set form

and write n(P), n(Q), n(R).

Three coins are tossed simultaneoulsy.

Codition for event P : To get at least one tail .

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11. Write sample space 'S' and number of sample point n(S) for each

of the following experiments. Also write events P, Q, R

in the set

form and write n(P), n(Q), n(R).

A box contains 20 balls, bearing only one number

from 1 to 20 on

each . If one ball is drawn at random.

Condition for event P : Number of the ball is divisible by 4 .

Condition for event Q : Number on the ball is prime

number

Condition for event R : Number on the ball is an odd

number less

than 15 .



12. Write sample space 'S' and number of sample point n(S) for each of
the following experiments. Also write events P, Q, R in
the set form
and write n(P), n(Q), n(R).
Two digit number are formed using digits 2, 3, 5, 7, 9

without

repetition of the digits.

Condition for event P : The number formed is odd .

Condition for event Q : The number is a multiple of 5.

Condition for event R : The number The number

formed is greater

than 75.



13. Write sample space 'S' and number of sample point n(S) for each

of the following experiments. Also write events P, Q, R in the set

form and write n(P), n(Q), n(R).

From three girls and one boy, committee of two persons is to be formed .

Condition for event P : There must be at least one

boy in the committee.

condition for event Q : There must be two girls in the

committee.



14. Two dice are rolled, write the sample space 'S' and number of

sample points n(S). Also write events and number of

sample points

in the event according to the given condition

Sum of the digits on upper face is a prime number

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15. Two dice are rolled, write the sample space 'S' and number of

sample points n(S). Also write events and number of

sample points

in the event according to the given condition

Sum of the digits on the upper face is multiple of 5.

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16. Two dice are rolled, write the sample space 'S' and number of

sample points n(S). Also write events and number of

sample points

in the event according to the given condition

Sum of the digits on the upper face is 25.

17. Two dice are rolled, write the sample space 'S' and number of

sample points n(S). Also write events and number of

sample points

in the event according to the given condition

Digit on the upper face of the first die is less than the

digit on the second die .



Based On Practice Set 5 4

1. Find the probability of the follwing, when one coin

is tossed.

Getting head

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2. Find the probability of the follwing, when one coin

is tossed.

Getting tail

3. If three coins are tossed, find the probabilty of the

following events

Getting at least one tail.

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4. If three coins are tossed, find the probabilty of the

following events

Getting head on third coin.



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

A is an Event : getting a number divisible by 3.

B is an Event : getting a number less than 5.



6. If one die is rolled then find the probability of each

of the following events

Number on the upper face is prime

7. If one die is rolled then find the probability of each

of the following events

Number on the upper face is even.

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8. If one die is rolled then find the probability of each

of the following events

Getting a number which is less than 7 on the upper

face.



9. If one die is rolled then find the probability of each

of the following events

Getting an odd number .

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10. Two dice are thrown . Find the probability of the

following events

The product of number on their upper faces is 12.



11. Two dice are thrown . Find the probability of the following events

The product of the numbers on their upper faces is

10.



12. Two dice are thrown . Find the probability of the

following events

The sum of the numbers on their upper faces is

multiple of 9



13. Two dice are thrown . Find the probability of the

following events

The sum of the numbers on their upper faces is at

least 9.



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14. Two dice are thrown . Find the probability of the

following events

The sum of the numbers on their upper faces is 15.

15. Two dice are thrown . Find the probability of the following events The number on the upper face of the second die is greater than the number on the upper face of the first die

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16. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is

a black card .



17. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is

A diamond card .

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18. A card is drawn at random from well-shuffled pack

of 52 cards.

Find the probability of getting a red card.



19. A card is drawn ar random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is

A face card .



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

events that the card drawn is

A king



21. A box contains 5 strawberry chocolates, 6 coffee chocolates and 2 peppermint chocolates . Find the probability of each of the following events, if one of the chocolates is picked from the box at random.

It is a coffee chocolate.



22. A box contains 5 strawberry chocolates, 6 coffee chocolates and 2 peppermint chocolates . Find the probability of each of the

following events, if one of the chocolates is picked

from the box at random .

it is a peppermint chocolate .



23. In a cricket team there are 6 batsmen 4 bowlers and 1 wicketkeeper. Out of these one player is to be selected at random as captain.

Find the probabiliy of the selection that

A bowler will be selected



24. In a cricket team there are 6 batsmen 4 bowlers and 1 wicketkeeper. Out of these one player is to be selected at random as captain.

Find the probability of the selection that

The wicketkeeper will be selected.



25. A bag contains 3 yellow, 4 blue and 5 white balls.

One ball is drawn

at random . Find the probability that it is blue

26. A beg contains 3 yellow, 4 blue and 5 white balls.

One ball is drawn

at random . Find the probability that it is Yellow or

white



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27. A bag contains 3 yellow, 4 blue and 5 white balls.

One ball is drawn

at random . Find the probability that it is Not white.

28. There are 40 tickets numbered 1 to 40 in a box. A ticket is drawn.

What is the probability that the ticket drawn Bears

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29. There are 40 tickets numbered 1 to 40 in a box. A

ticket is drawn.

What is the probability that the ticket drawn

Bears a number which is a perfect square.



30. A box contains 20 cards marked with the number

1 to 20 . One card

is drawn from this box at random. What is the probability of the following events : The number on the card is a prime number

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31. A box contains 20 cards marked with the number 1

to 20. One card

is drawn from this box at random. What is the probability of the following events : The number on the card is a perfect square.





32. There are three boys and two girls. A committee of two is to be

formed. Find the probability of the following events:

Event A : The committee contains at least one boy.

Event B : The committee contains one boy and one girl.

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33. Two digit numbers are formed from the digits 0, 1,

2, 3, 4 where are

not repeated. Find the probability of each of the

events that

the number formed is an even number.



34. Two-digit numbers are formed from the digits

 $0,\,1,\,2,\,3,\,4$ where

the digits are not repeated. Find the probability that

the number so formed is a prime numbers.



35. The probability of passing in an exam for Ramesh, Jay, Sunil are $\frac{3}{7}$, 0.78 and 66%. Who has least probability of passing ?

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36. In a certain race there are three boys A, B, C. The winning

probability of A is twice than B and the winning probability

of B is twice than C. If P(A) + P(B) + P(C) = 1,

then find the probability of each boy.

1. Choose the correct alternative .

A die is rolled. What is the probability that the number appearing on upper face is greater than 4 ?

A. (a)
$$\frac{1}{2}$$

B. (b) $\frac{5}{2}$
C. (c) $\frac{2}{5}$
D. (d) $\frac{1}{3}$

Answer: D





2. Choose the correct alternative .

If n (S) = 36, P (A) =
$$\frac{5}{12}$$
, then n (A) = ?

A. (a) 15
B. (b)
$$\frac{12}{5}$$

C. (c) $\frac{5}{2}$
D. (d) $\frac{1}{3}$

Answer: A



3. Choose the correct alternative .

If two digit numbers are formed using the digits 1, 2,

3, 4 without repeating them, then n (S) =

A. (a) 16

B. (b) 20

C. (c) 12

D. (d) 25

Answer: C


Complete the following activity

Complete the following table

Sr. No.	Random experiment	Sample space	Number of sample points in S
1.	One coin is tossed.	$S = \{H,T\}$	n(S) =
2.	Two coins are tossed.	S =	n(S) =
3.	Three coins are tossed.	S = {,THH, HTT, THT,TTH, TTT }	n(S) = 8
4.	A die is thrown.		n(S) =
		(x , a	



5. Solve the following questions.

If one coin and one die thrown simulaneously find

the probability of getting even numbre and tail.

There are 3 red 7 green and 12 white marbles in a jar.

One marble is drawn at random. Find the probability

that marble drawn in not

green.



7. Solve the following questions.

There are 60 tickets numbered from 1 to 60 in box . A

ticket is

drawn at random . What is the probability that the

ticket drawn,

bears a prime number ?

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8. Solve the following questions.

If two dice are rolled simultaneously, find the

probability of the following events .

The product of the digits on the upper faces is 14.



9. Solve the following questions.

If two dice are rolled simultaneously, find the

probability of the following events .

The sum of the digits on the upper faces is multiple

of 6.



10. Solve the following questions.

If two dice are rolled simultaneously, find the probability of the following events .

The digit on the first die is greater than the digit on

second die



A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is : A red picture card.



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12. Solve the following questions.

A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is : A club card.



A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is : A queen of spade.



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14. Solve the following questions.

The diameter of a circular garden is 70. m . There is

square shape fountain in a garden having side 20 m .

If a ball falls in the garden .

Find the probability that the ball falls in the fountain.



Find the probability of getting 53 Fridays in a year.



16. 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 $\frac{2}{3}$. Find the number of blue marbles in

the jar.

In a random experiment of choosing a card from a well shuffled

pack of cards, the possiblity of expected outcome for

which one is

the most?

- a. Getting a red face card
- b. Getting a black ace
- c. Getting a black king
- d. Getting a number card of diamond
- e. Getting a jack or a king



18. Basketball players John, Vasim, Akash were practising the ball drop in the basket. The probabilities of success for John, Vasim and Akash are $\frac{4}{5}$,0.83 and 58% respectively. Who had the greatest probability of success?

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Martin Martin Collection

Apply Your Knowledge

1. A coin is tossed once. What is the probaility of

getting a head ?



2. A coin is tossed twice. What is the probability of

getting exactly one head ?



3. Throw a die once. What are the different possibilities of getting dots

on to upper face ?

4. Do the following activities.

Total number of students in your class , n(S) = \Box Number of students from your class , wearing spectacles n (A) = \Box

Probability of a randomly selects student wearing spectacles,

P (A) = 🗌

Probability of a randomly selected student not wearing spectacles,

P (B) = 🗌

5. Complete the following activities.

(ii) fill in the blanks





1. In Which of the following experiments possibility of

expected

outcome is more ?

(i) Getting I on the upper face when a die is thrown.

(ii) Getting head by tossing a coin.