MATHS

BOOKS - FULL MARKS MATHS (TAMIL ENGLISH)

PROBABILITY

Thinking Corner

1. If the probability of success of an experiment is 0.4 . What is the probability of failure ?

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2. For a question on probability the student's answer was $\frac{3}{2}$. The teacher told that the answer was wrong. Why ?

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Progress Check

1. A random experiment was conducted. Which of these cannot be considered as a probability of an outcome ?

(i) $\frac{1}{5}$

(ii) $\frac{-1}{7}$

(iii) 0.40

(iv) -0.52

(v) 0

(vi) 1.3

(vii) 1

(viii) 72%

(ix) 107%

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2. Which among the following are mutually exclusive ?

Sl. No.	Trial	Event 1	Event 2
(*i*)	Roll a dice	getting a 5	getting an odd number
(*ii*)	Roll a dice	getting a 5	getting an even number
(*iii*)	Draw a card from a standard pack	getting a Spade Card	getting a black
(*iv*)	Draw a card from a standard pack	getting a Picture Card	getting a 5
(*v*)	Draw a card from a standard pack	getting a Heart Card	getting a 7

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Exercise 9 1

1. You are walking along a street. If you just choose a stranger crossing you, what is the porbability that his next birthday will fall on a Sunday ?

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2. What is the probability of drawing a King or a Queen or a Jack from a deck of cards ?

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3. What is the probability of throwing an even number with a single standard dice of six faces ?

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4. There are 24 balls in a pot. If 3 of them are Red, 5 of them are Blue and the remaining are Green then, what is the probability of picking out (i) a Blue ball, (ii) a Red ball and (iii) a Green ball ?

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5. When two coins are tossed, what is the probability that two heads are obtained?

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6. Two dice are rolled, find the probability that the sum is

(i) equal to 1 (ii) equal to 4 (iii) less than 13

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7. A manufacturer tested 7000 LED lights at random and found that 25 of them were defective . If a LED light is selected at random, what is the probability that the selected LED ligtht is a defective one .

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8. In a football match, a goalkeeper of a team can stop the goal, 32 times out of 40 attempts tried by a team. Find the probability that the opponent team can convert the attempt into a goal .

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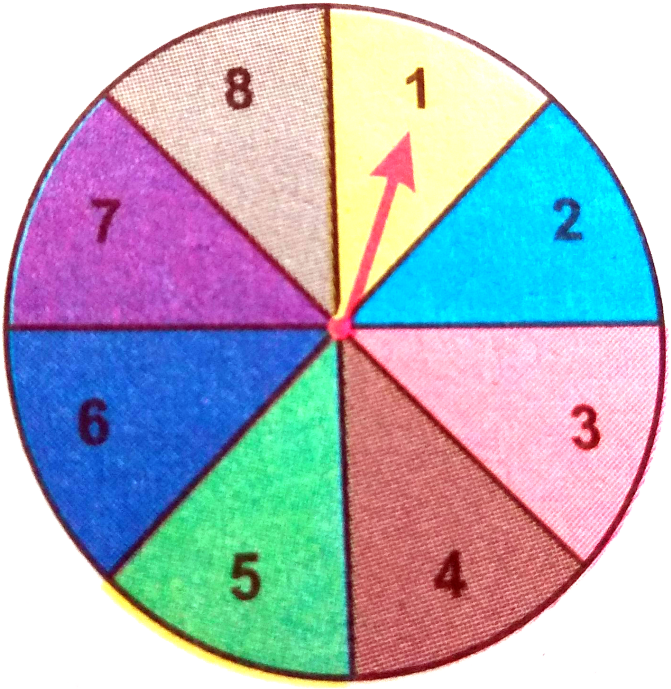
9. What is the probability that the spinner will not land on a multiple of 3 ?



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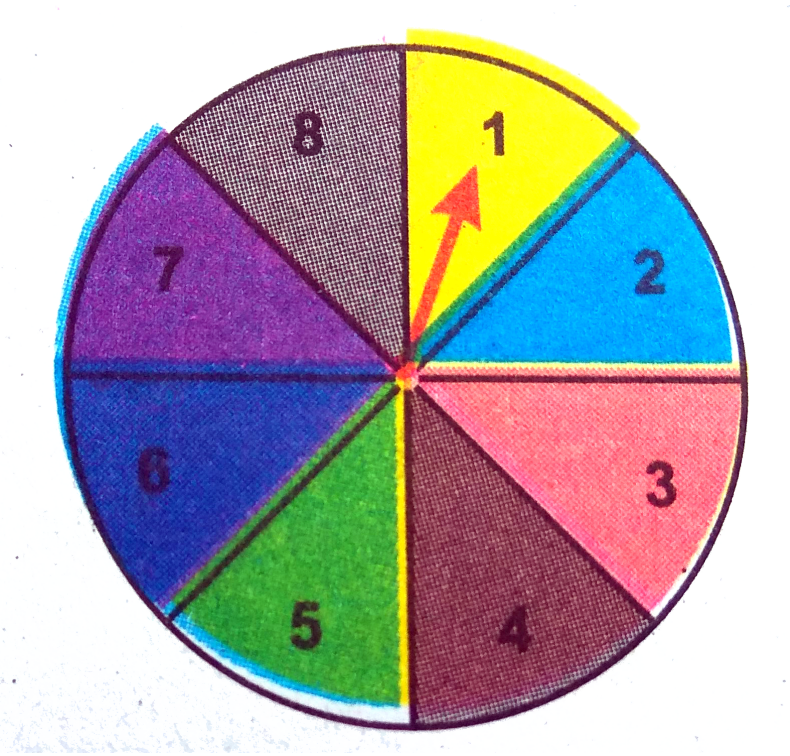
10. Frame two problems in calculating probability, based on the spinner shown here.



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Exercise 9 2

1. A company manufactures 10000 Laptops in 6 months. Out of which 25 of them are found to be defective. When you choose one Laptop from the manufactured, what is the probability that selected Laptop is a good one .

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2. In a survey of 400 youngsters aged 16-20 years, it was found that 191 have their voter ID card. If a youngster is seceted at random, find the probability that the youngster does not have their voter ID card

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3. The probability of guessing the correct answer to a certain question is $\frac{x}{3}$. If the probability of not guessing the correct answer is $\frac{x}{5}$, then find the value of x .

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4. If a probability of a player winning a particular tennis match is 0 . 72 . What is the probabillity of the player loosing the match ?

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5. 1500 families were surveyed and following date was recorded about their maids at home

Type of maids	Only part time	Only full time	Both
Number of families	860	370	250

A familiy is selected at random. Find the probability that the family selected has

(i) Both types of maids (ii) Part time maids (iii) No maids

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Exercise 9 3 Multiple Choice Question

1. A number between 0 and 1 that is used to measure uncertainty is called

A. Random variable

B. trial

C. Simple event

D. Probability

Answer: D

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2. Probability lies between

A. $-1 \text{ and } +1$

B. 0 and 1

C. 0 and n

D. 0 and ∞

Answer: B

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3. The probability based on concept of relative frequency theory is called

A. Empirical probability

B. Classical probability

C. Both (a) and (b)

D. Neither (a) nor (b)

Answer: A

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4. The probability of an event cannot be

A. equal to zero

B. Greater than zero

C. equal to one

D. Less than zero

Answer: D

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5. The probability of all possible outcomes ofa a random experiment is always equal to

A. one

B. zero

C. infinity

D. Less than one

Answer: A

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6. If A is any event is S then its complement is A' then P(A') is equal to

A. 1

B. 0

C. 1-A

D. 1-P(A)

Answer: D

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7. Which of the following cannot be taken as probability of an event ?

A. 0

B. 0.5

C. 1

D. `-1

Answer: D

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8. A particular result of an experiment is called

A. Trial

B. Simple event

C. Compound event

D. Outcome

Answer: D

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9. Collection of one or more outcomes of an experiment is called

A. Event

B. Outcome

C. Sample point

D. None of the above

Answer: A

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10. The six faces of the dice are called equally likely if the dice is

A. small

B. fair

C. Six-faced

D. Round

Answer: B

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Additional Question Solved

1. Which of the following cannot be taken as probability of an event ?

A. 0

B. 0.35

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

D. $-\frac{7}{20}$

Answer: D

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2. A letter is chosen at random from the word "MATHEMATICS" the probability of getting a vowel is ..... .

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

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

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

D. $\frac{5}{11}$

Answer: C

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3. If P(A) $= \frac{1}{3}$ then P(A)' is .....

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

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

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

D. 1

Answer: B

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4. An integer is chosen from the first twenty natural number, the probability that it is a prime number is ..... .

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

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

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

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

Answer: B

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5. From a well shuffled pack of 52 cards one card is drawn at random. The prabability of getting not a king is ..... .

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

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

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

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

Answer: A

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6. 1500 families with 2 children were selected randomly and the following data were recorded.

No. of girls in a family	2	1	0
No. of familes	475	814	211

Compute the probability of a family chosen at random having one girl.

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7. The record of weather station shows that out of the part 250 consecutive days its whether forecast were correct 175 times . What is the probability that it was not correct on a given data ?

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8. If A coin is tossed 200 times and is found that a tail comes up for 120 times. Find the probability of getting a tail.

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9. 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 drawing a red ball, then find the number of blue balls in the bag.

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10. Find the probability that a non leap year selected at random will have 53 fridays.

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Assignment Choose The Correct Answer

1. If P is the probability of an event A, then P satisfies .....

A. $0 < p < 1$

B. $0 \leq P \leq 1$

C. $0 \leq P < 1$

D. $0 < P \leq 1$

Answer: B

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2. There are 6 defective items in a sample of 20 items, one item is drawn at random. The probability that it is a non - defective item is ..... .

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

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

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

D. 0

Answer: C

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3. The probability that a student will score centum in mathematics is $\frac{4}{5}$. The probability that he will not score centum is ..... .

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

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

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

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

Answer: A

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4. From a well shuffled pack of 52 cards one card is drawn at random.

The prabability of getting a diamond 10 is ..... .

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

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

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

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

Answer: D

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5. An integer is chosen from the first twenty natural number, the probability that it is a prime number is ..... .

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

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

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

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

Answer: B

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Assignment Answer The Following Questions

1. 80 bulbs are selected at random from a lot and their life time (in hours) is recorded in the form of a frequency table given below.

Life time in (hours)	300	500	700	900	1100
Frequency	10	12	23	25	10

Find the probability that bulbs selected randomly from the lot has life less than 900 hours.

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2. In a cricket match, a batsman hits a boundary 8 times out of 40 balls he plays. Find the probability that he did not hit a boundary.

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3. There are 20 boys and 15 girls in a class of 35 students . A student is chosen at random . Find the probability that the chosen student is a (i) boy (ii) girl .

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4. If A is an event of a random experiment such that $P(A) : P\left(\overline{A}\right) = 7 : 12$ then find P(A).

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5. Find the probability that a leap year selected at random will have 53 fridays.

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