



MATHS

BOOKS - SWAN PUBLICATION

PROBABILITY

Exercise 15 1

1. Probability of an event E + Probability of the event 'not E ' =



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2. Complete the following statements: The probability of an event that cannot happen is Such an event is called



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3. Complete the following statements: The probability of an event that is certain to happen is Such an event is called



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4. Complete the following statements: The sum of the probabilities of all the elementary events of an experiment is



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5. Complete the following statements: The probability of an event is greater than or equal to And less than or equal to



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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.



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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. In the following experiment have equally likely outcomes? Explain. A trial is made to answer a true-false question. The answer is right or wrong.



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9. Which of the following experiments have equally likely outcomes? Explain: A baby is born. It is a boy or a girl.



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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.



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

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

B. -1.5

C. 0.15

D. 0.7

Answer: B



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

E.



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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 : an orange flavoured candy?



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14. 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 : a lemon flavoured candy?



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15. 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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16. 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?



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17. 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?



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18. A piggy bank contains hundred 50p 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, what is the probability that the coin (i) will be a 50 p coin? (ii) will not be a ₹ 5 coin?



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19. 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?



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20. 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, 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 than 9 ?



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21. A die is thrown once. Find the probability of getting : a prime number



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22. A die is thrown once. Find the probability of getting : a number lying between 2 and 6,



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23. A die is thrown once. Find the probability of getting : an odd number.



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



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



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



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



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



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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 : What is the probability that the card is queen ?



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31. 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, what is the probability that the second card picked up is (a) an ace? (b) a queen?



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32. 12 defective pens are accidentally mixed up 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 good one.



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33. A lot of 20 bulbs contains 4 defective ones. One bulb is drawn at random from the lot. What is the probability that the bulb is defective?



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34. A lot of 20 bulbs contain 4 defective ones. Suppose the bulb drawn in (i) is not defective and is not replaced. Now one bulb is drawn at

random from the rest. What is the probability that this bulb is not defective?



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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 two-digit number.



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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 perfect square number



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37. 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.





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

A B C D E A

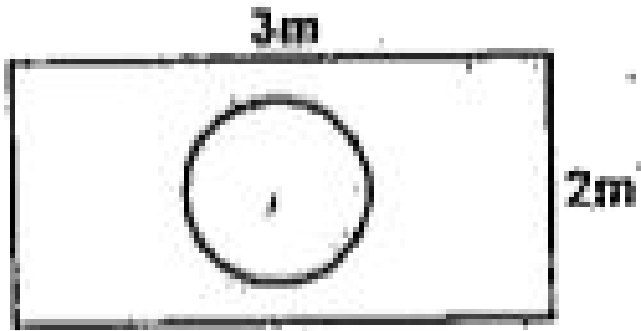
The die is thrown once. What is the probability of getting (i) A ? (ii) D ?



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

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



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40. 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 it if it is defective. The shopkeeper draws one pen

at random and gives it to her. What is the probability that : She will buy it ?



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41. 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 it if it is defective. The shopkeeper draws one pen at random and gives it to her. What is the probability that : She will not buy it ?



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42. A game consists of tossing a one rupee coin 3 times and noting its out come 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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43. A die is thrown twice. What is the probability that : 5 will not come up either

time ?



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44. A die is thrown twice. What is the probability that : 5 will come up atleast once ?



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45. Which of the following arguments are correct ? Give reasons for your answer : If two coins are tossed simultaneously there are

three possible outcomes - two heads, two tails or one of each. Therefore, for each of these outcomes, the probability is $\frac{1}{3}$.



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46. Which of the following arguments are correct ? Give reasons for your answer : 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 $\frac{1}{2}$.



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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 : consecutive days ?



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2. A die is numbered in such a way that its faces show the numbers 1, 2, 2, 3, 3, 6. It is thrown two times and the total score in two throws is noted. Complete the following table which gives a few values of the total score on the two throws :

		Number in first throw					
		1	2	2	3	3	6
Number in second throw	+						
	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 probability that the total score is : even ?



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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, find the number of blue balls in the bag.



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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 ?





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5. If 6 more black ball are put in the box, the probability of drawing a black ball is now double of what it was before. Find x



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6. 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.



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