MATHS

BOOKS - CBSE COMPLEMENTARY MATERIAL MATHS (HINGLISH)

PROBABILITY

Very Short Answer Type Questions Fill In The Blanks

1. The probability of an event is greater than or equal to..... and is less than or equal to .....

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2. Write the probability of an impossible event.

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

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6. If probability of winning a game is 4/9, then the probability of its losing is .....

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7. If coin is tossed twice, then the number of possible outcomes is .....

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8. If a die is thrown twice, then the number of possible outcomes is .....

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Very Short Answer Type Questions True False

1. Can the experimental probability of an event be a negative number? If not, why?

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2. The probability of an event is greater than 1.

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Very Short Answer Type Questions Multiple Choice Questions

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

A. 0.7

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

C. -1.5

D. 0.15

Answer: C

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2. Which of the following can be the probability of an event?

A. -0.04

B. 1.004

C. $\frac{18}{23}$

D. $\frac{8}{7}$

Answer: C

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3. An event is ver unlikely to happen. Its propbability is closet to

A. 0.0001

B. 0.001

C. 0.01

D. 0.1

Answer: A

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4. Out of one digit prime numbers, one number is selected at random. The probability of selecting an even number is:

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

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

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

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

Answer: B

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

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

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

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

D. 0

Answer: A

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6. Rashmi has a die whose six faces show the letters as given below

A	B	C	D	A	C

If she throws the die once, then the probability of getting C is

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

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

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

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

Answer: A

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7. A card is drawn from a well shuffled pack of 52 playing cards. The event E is that the card drawn is not a face card. The number of outcomes favourable to the event E is

A. 51

B. 40

C. 36

D. 12

Answer: A::B::C::D

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Very Short Answer Type Questions Choose The Correct Answer From The Given Four Options

1. 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. $1 - \frac{1}{p}$

Answer: A::B::C

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2. In a family of 3 children, the probability of having at least one boy is $\frac{7}{8}$ (b) $\frac{1}{8}$ (c) $\frac{5}{8}$ (d) $\frac{3}{4}$

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

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

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

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

Answer: A::B::C

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

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

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

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

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

Answer: C

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4. The probability that a non-leap year selected at random will contains 53 Mondays is:

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

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

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

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

Answer: A

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5. A bag contains 6 red and 5 blue balls. One ball is drawn at random. The probability that the ball is blue is:

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

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

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

D. $\frac{6}{11}$

Answer: C

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6. One alphabet is chosen from the word MATHEMATICS. The probability of getting a vowel is:

A. $\frac{6}{11}$

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

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

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

Answer: A::D

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7. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn

is (i) neither an ace nor a king (ii) neither a red card nor a queen. (iii) other than an ace

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8. Out of 250 bulbs in a box, 35 bulbs are defective. One bulb is taken out at random from the box. Find the probability that the drawn bulb is not defective.

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9. The odds in favour of an event are $3:4$. Find the probability of the non occurrence of the event.

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10. If 29 is removed from (1, 4, 9, 16, 25, 29) then find the probability of getting a prime number.

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11. A card is drawn at random from a deck of playing cards. Find the probability of getting a face card.

12. In 1000 lottery tickets there are 5 prize winning tickets. Find the probability of winning a prize if a person buys one ticket.

13. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn is (i) a ten (ii) a spade (iii) a black card (iv) the seven of clubs

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14. A die is thrown for times .The probability of getting perfect square in at least one throw is

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

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Short Answer Type Questions 1

1. Find the probability of multiples of 7 in 1, 2, 3, ...,33, 34, 35.

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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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3. Two different dice are tossed together. Find the probability (i) of getting a doublet (ii)of getting a sum of 10, of the numbers on two dice

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4. A box contains 12 balls of which some are red in colour. If 6 more red balls are put in the box and a ball is drawn at random, the probability of drawing a red ball doubles than what it was before. Find the number of red balls in the box.

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5. 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

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6. Three unbiased coins are tossed simultaneously. Find the probability of getting (i) exactly two heads, (ii) at least two heads, (iii) at most 2 heads.

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7. Cards marked with number 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 cards bears a perfect square number.

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Short Answer Type Questions 2

1. A number x is selected at random from the numbers 1, 4, 9, 16 and another number y is selected at random from the numbers 1, 2, 3, 4. Find the probability that the value of xy is more than 16.

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2. In a single throw of a pair of different dice, what is the probability of getting (a) a prime number on each dice, (b) a total of 9 or 11.

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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.

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4. Two dice are rolled together. Find the probability of getting such numbers on the two dice whose product is 12.

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5. Two dice are rolled once. Find the probability of getting such numbers on the two dice,

(b) Sum of numbers on the two dice is atmost 5.

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6. There are hundred 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.

It is divisible by 9 and is a perfect square

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7. There are hundred 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.

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8. In a lottery, there are 10 prizes and 25 are empty. Find the probability of getting a prize. Also verify $P(E) + P(\overline{E}) = 1$ for this event.

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9. P(winning) $\frac{x}{12}$, P(Losing) $= \frac{1}{3}$. Find x.

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Long Answer Type Questions

1. Cards marked with numbers 3, 4, 5, ..., 50 are placed in a box and mixed thoroughly. One card is drawn at random from the box. Find the probability that number on the drawn card is

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2. Cards marked with numbers 3, 4, 5, ...,50 are placed in a box and mixed thoroughly. One card is drawn at random from the box, find the probability that the number on the drawn card is

a two digit number.

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3. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. Find the probability that the balls drawn is

White or blue

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4. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. Find the probability

that the balls drawn is

red or black

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5. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. Find the probability that the balls drawn is

not white

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6. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. Find the probability that the balls drawn is

neither white nor black

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7. The king, queen and jack of diamonds are removed from a pack of 52 playing cards and the pack is well shuffled. A card is drawn from the remaining cards.

Find the probability of getting a card of diamond

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8. The king, queen and jack of diamonds are removed from a pack of 52 playing cards and the pack is well shuffled. A card is drawn from the remaining cards.

Find the probability of getting a card of a jack

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9. The probability of a defective egg in a lot of 400 eggs is 0.035. Calculate the number of defective eggs in the lot. Also calculate the probability of taking out a non defective egg from the lot.

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10. In a fair at a game stall, slips marked with numbers 3,3,5,7,7,7,9,9,9,11 are placed in a box. A person wins if the mean of numbers are

written on the slip. What is the probabilty of his losing the game?

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11. A box contains 90 discs which are numbered from 1 to 90. If one discs is drawn at random from the box, find the probability that it bears (i) a two digit number (ii) a perfect square number (iii) a number divisible by 5.

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12. A box contains 90 discs which are number from 1 to 90 . If one disc is drawn at random form the box, find the probility that it bears:

(i) a two-digits number

(ii) a numbre divisible by 5.

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13. 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 (i) a two-digit number, (ii) a number divisible by 5.

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14. A card is drawn at randown from a well shuffled deck of playing cards. Find the probability that the card drawn is

a card of spade or an ace

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15. A card is drawn at randown from a well shuffled deck of playing cards. Find the probability that the card drawn is

a red king

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

neither a king nor a queen

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17. A card is drawn at randown from a well shuffled deck of playing cards. Find the probability that the card drawn is

either a king or a queen

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

card drawn is

a face card

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19. A card is drawn from a well shuffled deck of playing cards. Find the probability that the card drawn is

red colour face card

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20. A card is drawn from a well shuffled deck of playing cards. Find the probability that the card drawn is

black colour face card

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21. Ramesh got Rs24000 as Bonus. He donated Rs5000 to temple. He gave Rs12000 to his wife, Rs2000 to his servant and gave rest of the amount to his daughter. Calculate the

probability of

wife's share

22. Ramesh got Rs24000 as Bonus. He donated Rs5000 to temple. He gave Rs12000 to his wife, Rs2000 to his servant and gave rest of the amount to his daughter. Calculate the probability of

Servant's Share

23. Ramesh got Rs24000 as Bonus. He donated Rs5000 to temple. He gave Rs12000 to his wife, Rs2000 to his servant and gave rest of the amount to his daughter. Calculate the probability of

daughter's share.

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24. 240 students reside in a hostel. Out of which 50% go for the yoga classes early in the

morning, 25% go for the Gym club and 15% of them go for the morning walk. Rest of the students have joined the laughing club. What is the probability of students who have joined laughing club?

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25. A box contains cards numbered from 11 to 123. A card is drawn at random from the box. Find the probability that the number on the

drawn card is:

A square number

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26. A box contains cards numbered from 11 to 123. A card is drawn at random from the box. Find the probability that the number on the drawn card is:

a multiple of 7.

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

5 will come up at least once

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

5 will not come up either time

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29. Cards marked 1, 3, 5 .... 49 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that the number on the card is :

divisible by 3

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30. Cards marked 1, 3, 5 .... 49 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that the

number on the card is :

a composite number

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31. Cards marked 1, 3, 5 .... 49 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that the number on the card is :

multiple of 3 and 5

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32. Cards marked 1, 3, 5 .... 49 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that the number on the card is :

not a perfect square

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33. Red queens and black jacks are removed from a pack of 52 playing cards. Find the probability that the card drawn from the

remaining cards is:

a card of clubs or an ace

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34. Red queens and black jacks are removed from a pack of 52 playing cards. Find the probability that the card drawn from the remaining cards is:

a black king

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35. Red queens and black jacks are removed from a pack of 52 playing cards. Find the probability that the card drawn from the remaining cards is:

neither a jack nor a king

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36. Red queens and black jacks are removed from a pack of 52 playing cards. Find the probability that the card drawn from the

remaining cards is:

either a king or a queen

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

a blue card

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38. 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 (i) a blue card (ii) not a yellow card (iii) neither yellow nor a blue card.

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39. 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 (i) a blue card (ii) not a yellow card (iii) neither yellow nor a blue card.

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Practice Test

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

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2. 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?

3. If a single letter is selected at random from the word 'PROBABILITY', then the probability that it is a vowel is

4. The probability of selecting a rotten apple randomly from a heap of 900 apples is 0.18. The number of rotten apples are .....

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5. Find the probability of having 53 friday in a year

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6. One card is drawn at random from the well shuffled pack of 52 cards. Find the probability of getting a black face card or a red face card.

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7. A coin is tossed twice. Find the probability of getting atleast one tail.

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8. A box contains 5 Red, 4 green and 7 white marbles. One marbles is drawn at random from the box. What is the probability that marble is

(i) not white

(ii) neither red nor white

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9. A die is thrown once. find the probability that the number.

(i) is an even prime number

(ii) is a perfect square

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10. Cards bearing numbers 1,2,5,....,35 are kept in a bag. A card is drawn at random from the bag. Find the probability of getting a card bearing (i) a prime number less than 15, (ii) a number divisible by 3 and 5.

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11. From a deck of 52 playing cards, king, queen and jack of a club are removed and a card is drawn from the remaining cards. Find the probability that the card drawn is (i) A spade

(ii) a queen

(iii) A club

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