Ques No.	Question
1 - 10388	CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY If the mean and variance of a binomial distribution are respectively 9 and 6, find the distribution. ⊙ Click to watch Free Video Solution of this question on Doubtnut
2 - 10389	CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY There are two bags I and II. Bag I contains 3 white and 3 red balls and Bag II contains 4 white and 5 red balls. One ball is drawn at random from one of the bags and is found to be red. Find the probability that it was drawn from bag II.

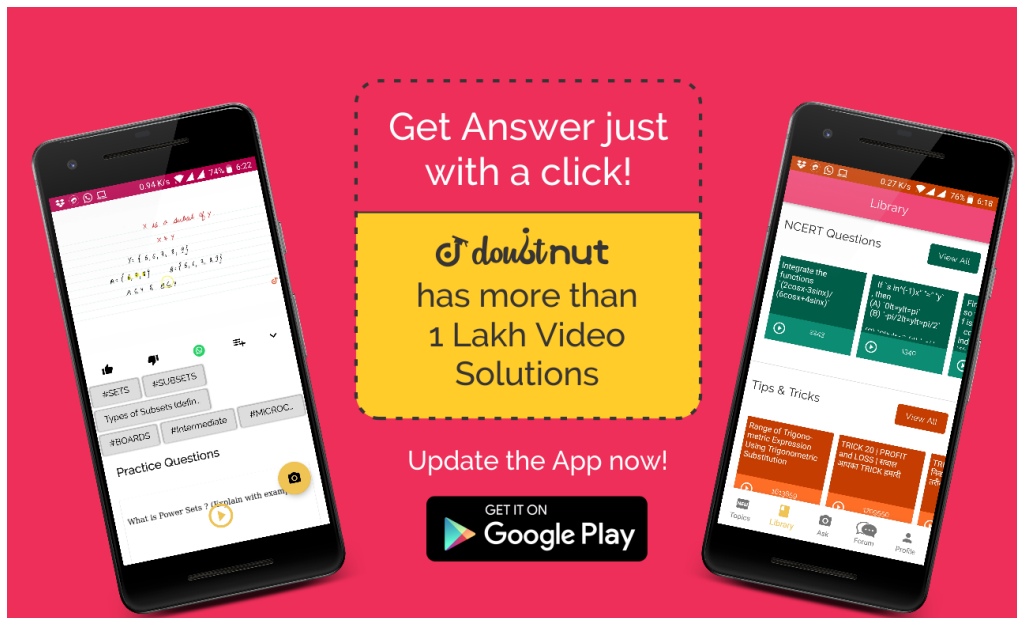**CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY**

A card is drawn at random from a well-shuffled pack of 52 cards. Find the probability that it is neither a king nor a heart.

4 - 10401

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

An urn contains 6 red and 5 blue balls. Two balls are drawn at random with replacement.

Find the probability of getting (i) 2 red balls (ii) 2 blue balls (iii) one red and one blue ball

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5 - 10499

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Two cards are drawn successively with replacement from a well shuffled pack of 52 cards. Find the probability distribution of number of jacks.

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6 - 10501

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A and B toss coin alternately till one of them gets a head and wins the game. If A starts first, find the probability the B will win the game.
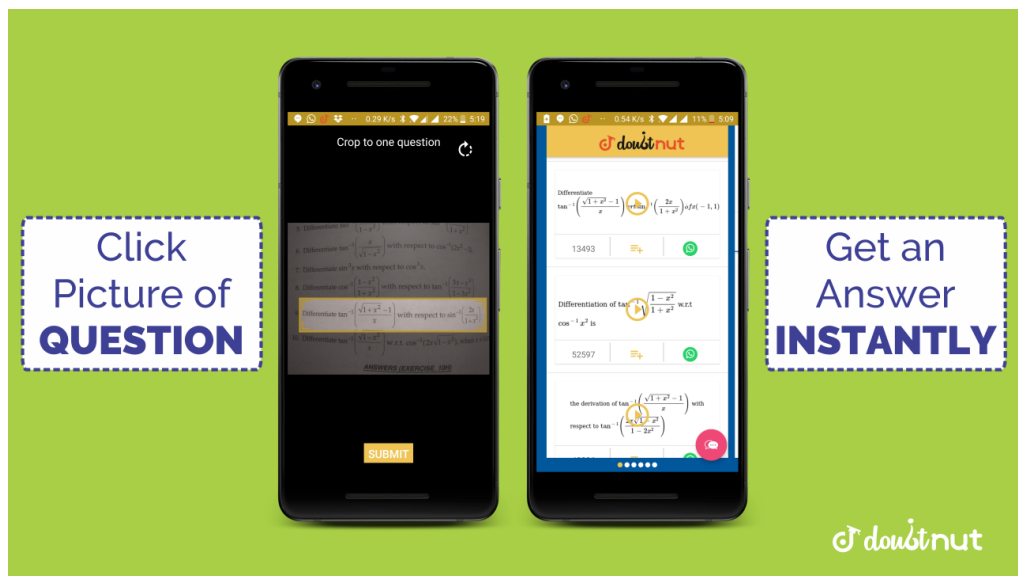
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7 - 10516

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A card is drawn at random from a well-shuffled pack of 52 cards. Find the probability that it is neither a ace nor a king.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

An urn contains 7 red and 4 blue balls. Two balls are drawn at random with replacement. Find the probability of getting (a) 2 red balls (b) 2 blue balls (c) one red and one blue ball.

8 - 10520

9 - 10554

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A and B throw a pair of die turn by turn. The first to throw 9 is awarded a prize. If A starts the game, show that the probability of A getting the prize is $\dfrac{9}{7}$

A man is known to speak truth 3 out of 4 times. He throws a die and report that it is a 6. Find the probability that it is actually 6.

10 - 10559

11 - 10581

A pair of dice is thrown 4 times. If getting a doublet is considered a success, find the probability distribution of number of successes.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

An insurance company insured 2000 scooter drivers, 4000 car drivers and 6000 truck drivers. The probability of an accident involving a scooter, a car and a truck are 0.01, 0.03 and 0.15 respectively. One of the insured persons meets with an accident. What is the probability that he is a scooter driver.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Three bags contain balls as shown in the table below: Bag Number of White balls Number of Black balls Number of Red balls I 1 2 3 II 2 1 1 III 4 3 2 A bag is chosen at random and two balls are drawn from it. They happen to be white and red. What is the probability that they came from the III bag?

14 - 10622

Find the probability of throwing at most 2 sixes in 6 throws of a single die.

15 - 10626

Find the mean number of heads in three tosses

of a fair coin.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

16 - 10636
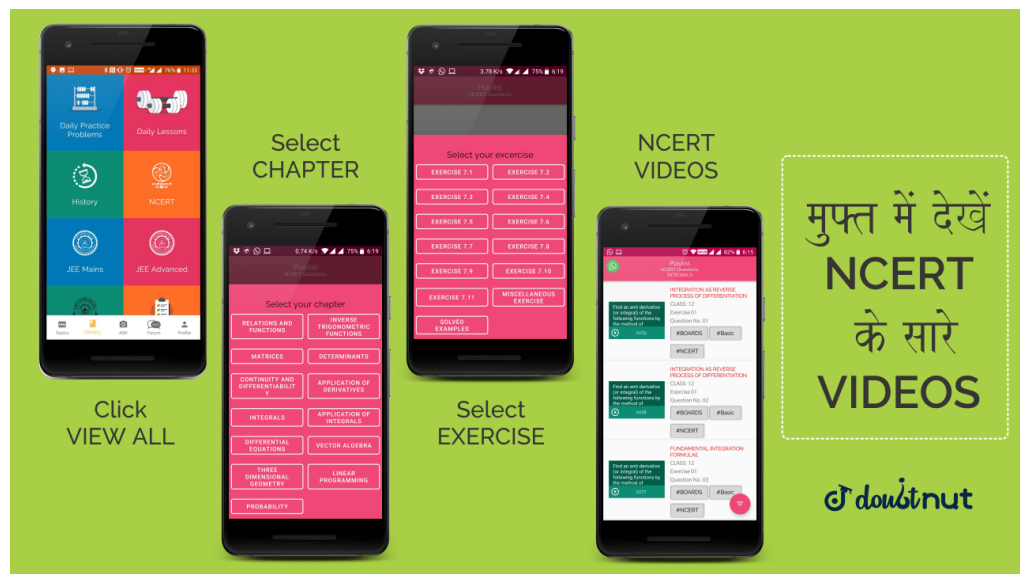
An experiment succeeds twice as often as it

fails. Find the probability that in the next six

trails there will be at least 4 successes.

17 - 10637

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Assume that the chances of a patient having a heart attack is 40%. Assuming that a meditation and yoga course reduces the risk of heart attack by 30% and prescription of certain drug reduces its chance by 25%. At a time a patient can choose any one of the two options with equal probabilities. It is given that after going through one of the two options, the patient selected at random suffers a heart attack. Find the probability that the patient followed a course of meditation and yoga. Interpret the result and

state which of the above stated methods is more beneficial for the patient.

18 - 10640	**CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY** Of the students in a college, it is known that 60% reside in hostel and 40% day scholars (not residing in hostel). Previous year results report that 30% of all students who reside in hostel attain 'A' grade and 20% of day cholars attain 'A' grade in their annual examination. At the end of the year, one student is chosen at random from the college and he has an 'A' grade, what is the probability that the student is a hosteler?

19 - 10675

Often it is taken that a truthful person commands, more respect in the society. A man is known to speak the truth 4 out of 5 times. He throws a die and reports that it is actually a six. Find the probability that it is actually a six. Do you also agree that the value of truthfulness leads to more respect in the society?

20 - 10677

In a group of 50 scouts in a camp, 30 are well trained in first aid techniques while the remaining are well trained in hospitality but not in first aid. Two scouts are selected at random from the group. Find the probability distribution of number of selected scouts who are well trained in first aid. Find the mean of the distribution also. Write one more value which is expected from a well trained scout.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A die is thrown again and again until three sixes are obtained. Find the probability of obtaining

the third six in the sixth thrown of the die.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

22 - 10736

A card from a pack of 52 cards is lost. From the remaining cards of the pack, two cards are drawn at random and are found to be both clubs. Find the probability of the lost card being of clubs.

23 - 10737

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

From a lot of 10 bulbs, which includes 3 defectives, a sample of 2 bulbs is drawn at random. Find the probability distribution of the number of defective bulbs.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A family has 2 children. Find the probability that both are boys, if it is known that: (i) at least one of the children is a boy, (ii) the elder child is a boy.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

In a certain college, 4% of boys and 1% of girls are taller than 1.75 metres. Furthermore, 60% of the students in the college are girls. A

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24 - 10749

25 - 10753

student is selected at random from the college and is found to be taller than 1.75 metres. Find the probability that the selected student is a girl.

26 - 10784 **CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY**

Given three identical boxes I, II and III each containing two coins. In box I, both coins are gold coins, in box II, both are silver coins and in box III, there is one gold and one silver coin. A person chooses a box at random and takes out a coin. If the coin is of gold, what is the probability that the other coin in the box is also of gold?

A random variable X has the following probability distribution: I 0 1 2 3 4 5 6 7 $P(X)$ 0 K $2K$ $2K$ $3K$ K^2 $2K^2$ $7K^2 + K$

Determine: (i) K (ii) P(X<3) (iii) P(X > 6) (iv) P (0 < X < 3)

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How many times must a man toss a fair coin, so that the probability of having at least one

head is more than 80%?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Suppose a girl throws a die. If she gets a 5 or 6, she tosses a coin 3 times and notes the number of heads. If she gets 1,2,3 or 4 she tosses a coin once and notes whether a head or tail is obtained. If she obtained exactly one head, what is the probability that she threw 1,2,3, or 4 with the die?

30 - 10827

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Two cards are drawn simultaneously (without replacement) from a well-shuffled pack of 52

cards. Find the mean and variance of the

number of red cards.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

31 - 10870

A pair of dice is thrown 4 times. If getting a

doublet is considered a success, find the

probability distribution of the number of

successes and hence find its mean.
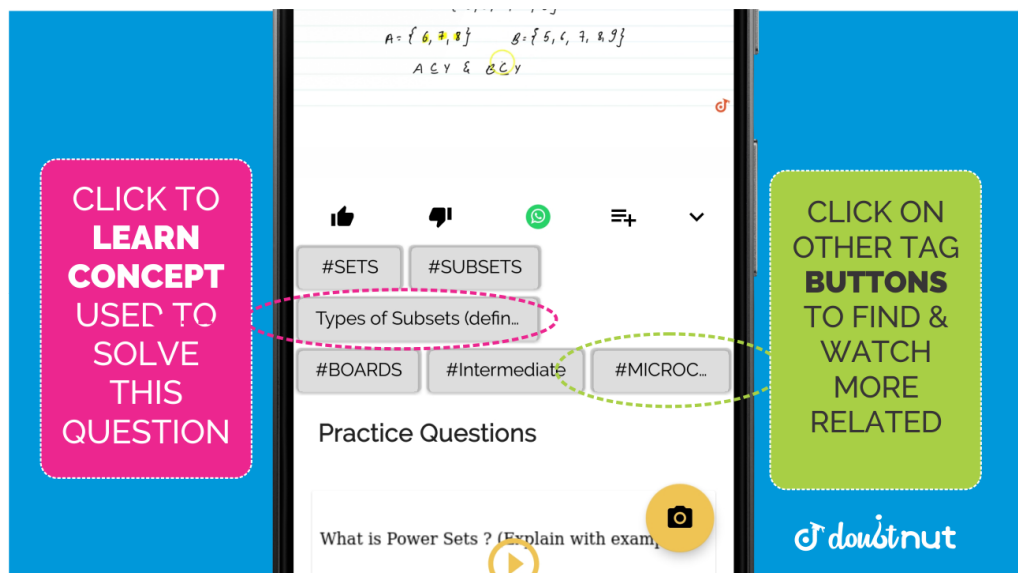
32 - 10889

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A speaks truth in 60% of the cases, while B in 90% of the cases. In what percent of cases are they likely to contradict each other in stating the same fact? In the cases of contradiction do you think, the statement of B will carry more weight as he speaks truth in more number of cases than A?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

In answering a question on a multiple choice test, a student either knows the answer or guesses. Let $\dfrac{3}{5}$ be the probability that he knows the answer and $\dfrac{2}{5}$ be the probability that

he guesses. Assuming that a student who guesses at the answer will be correct with probability $\dfrac{1}{3}$, what is the probability that the student knows the answer, given that he answered it correctly?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

34 - 10892

An urn contains 4 white and 3 red balls. Let X be the number of red balls in a random draw of three balls. Find the mean and variance of X.

35 - 10895

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

On a multiple choice examination with three possible answers (out of which only one is

correct) for each of the five questions, what is the probability that a candidate would get four or more correct answers just guessing?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY
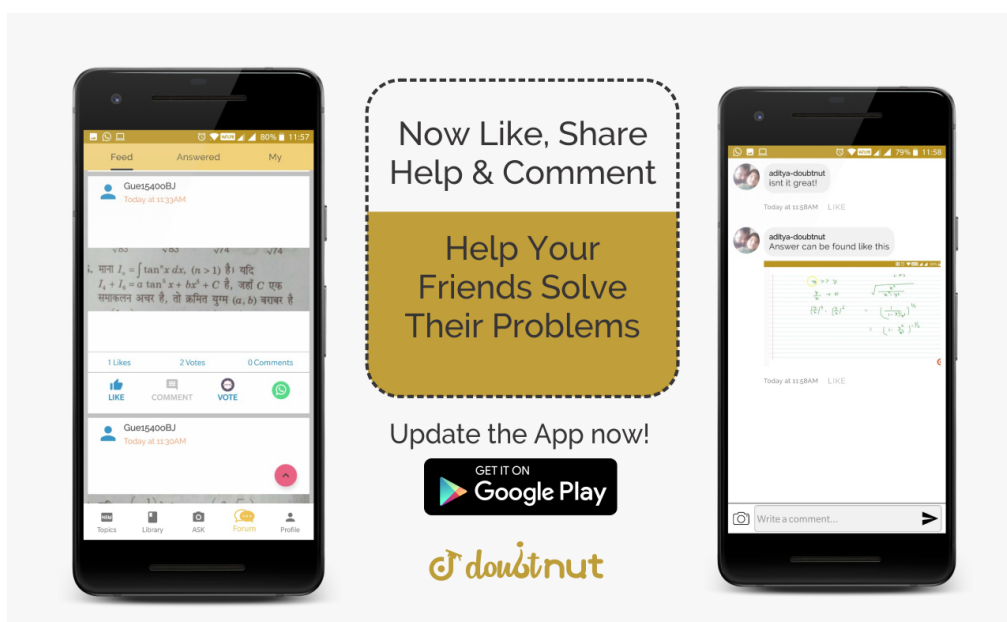
36 - 10909

A bag contains 4 balls. Two balls are drawn at random, and are found to be white. What is the probability that all balls are white?

37 - 10967

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Coloured bills are distributed in three bags as shown in the following table: Bag Colour of the ball   Black White Red I 1 2 3 II 2 4 1 III 4 5 3 A bag is selected at random and then two balls are randomly drawn from the selected bag. They happen to be black and red. What is the probability that they came from bag I?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Probabilities of solving a specific problem independently by A and B are $\dfrac{1}{2}\ and\dfrac{1}{3}$ respectively. If both try to solve the problem independently, find the probability that (i) the

problem is solved (ii) exactly one of them

solves the problem.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

39 - 11035
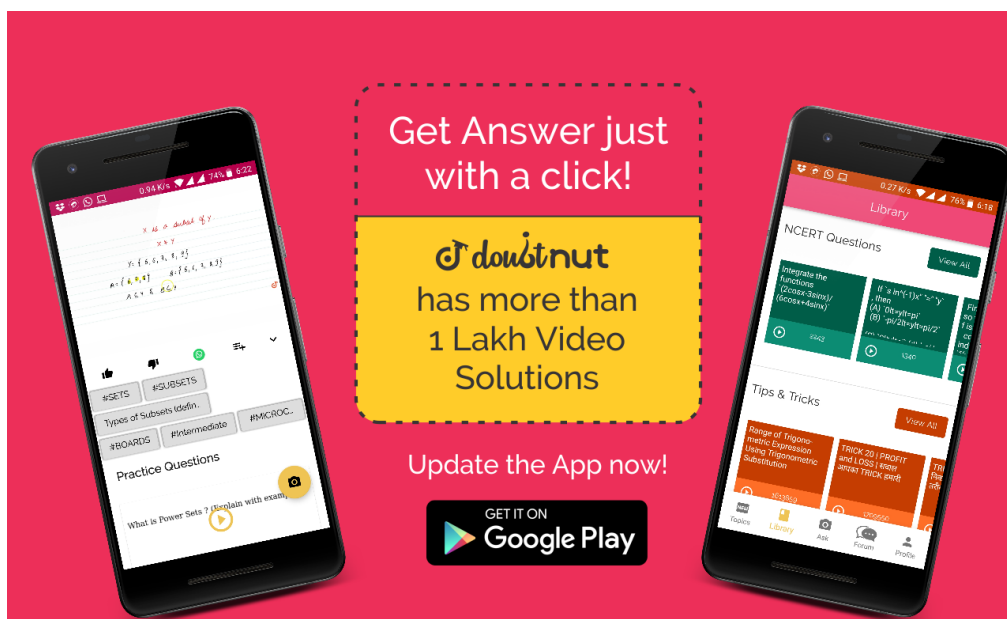
Suppose 5% of men and 0.25% of women have

grey hair. A grey haired person is selected at

random. What is the probability of this person

being male? Assume that there are equal

number of males and females.

The probabilities of two students A and B coming to the school in time are $\dfrac{3}{7}$ and $\dfrac{5}{7}$ respectively. Assuming that the events, A coming in time and B coming in time are independent, find the probability of only one of them coming to the school in time. Write at least one advantage of coming to school in time.

Two cards are drawn simultaneously (or successively without replacement) from a well

shuffled pack of 52 cards. Find the mean and variance of the number of red cards.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

The probability that A hits a target is $\frac{1}{3}$ and the probability that B hits it is $\frac{2}{5}$. If each one of and B shoots at the target, what is the probability that (i) the target is hit? (ii) exactly one-of-them-hits the target?

42 - 11069

43 - 11086

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

On a multiple choice examination with three possible answers (out of which only one is correct) for each of the five questions, what is

the probability that a candidate would get four

or more correct answers just by guessing?
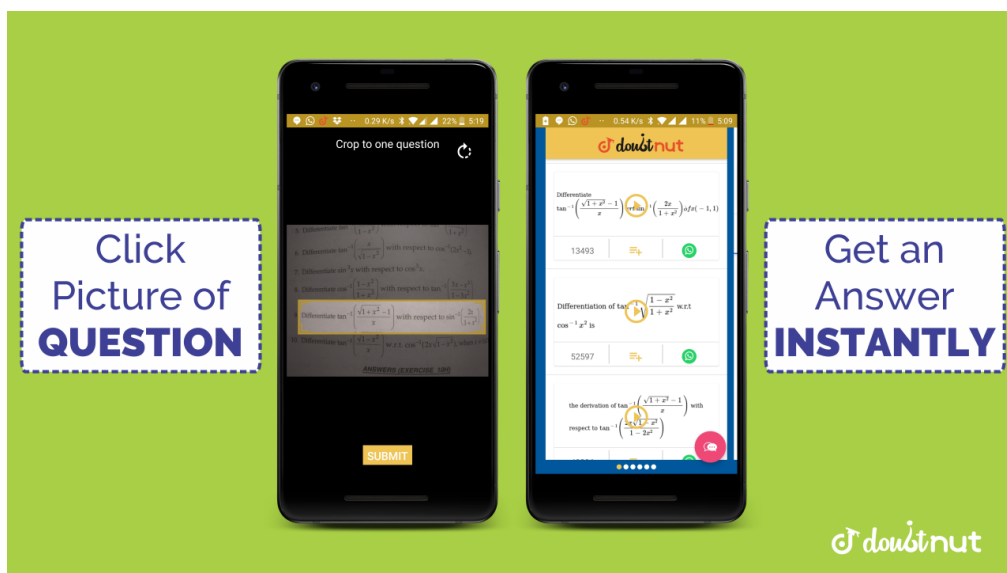
44 - 13218

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

In a game, a man wins rupees five for a six and

loses rupee one for any other number, when a

fair die is thrown. The man decided to throw a

die thrice but to quit as and when he gets a six.

Find the expected value of the amount he

wins/loses.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

45 - 13219

An urn contains 4 balls. Two balls are drawn at random from the urn (without replacement) and are found to be white. What is the probability that all the four balls in the urn are white ?

46 - 13224

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A class has 15 students whose ages are 14, 17, 15, 14, 21, 17, 19, 20, 16, 18, 20, 17, 16, 19 and 20 years. One student is selected in such a manner that each has the same chance of being chosen and the age X of the selected student is recorded. What is the probability

distribution of the random variable X ? Find the

mean of X.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

47 - 13257

From a lot of 15 bulbs which include 5

defectives, a sample of 4 bulbs is drawn one by

one with replacement. Find the probability

distribution of number of defective bulbs. Hence

find the mean of the distribution.

48 - 13258

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A card from a pack of 52 playing cards is lost.

From the remaining cards of the pack three

cards are drawn at random (without

replacement) and are found to be all spades.

Find the probability of the lost card being a

spade.

49 - 13262

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Assume that each born child is equally likely to

be a boy or a girl. If a family has two children,

what is the conditional probability that both are

girls ? Given that (i) the youngest is a girl. (ii)

atleast one is a girl.

50 - 13321	**CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY** Five cards are drawn one by one, with replacement, from a well shuffled deck of 52 cards. Find the probability that (i) all the five cards are diamonds. (ii) only 3 cards are diamonds. (iii) none is a diamond.
51 - 13335	**CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY** Three cards are drawn at random (without replacement) from a well shuffled pack of 52 playing cards. Find the probability distribution of number of red cards. Hence find the mean of the distribution.
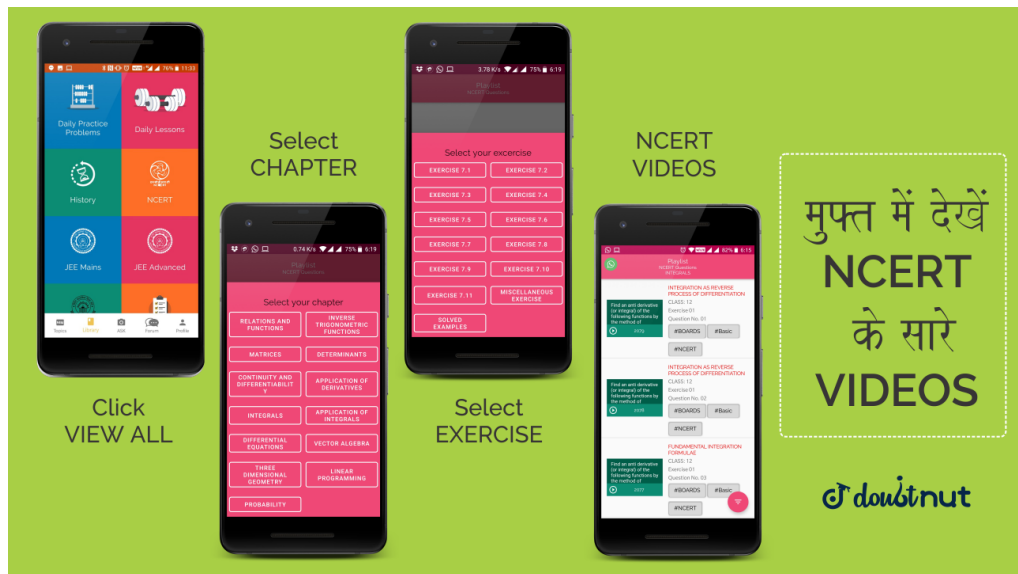
CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Four cards are drawn successively with replacement from a well shuffled deck of 52 cards. What is the probability that (i) all the four cards are spades ? (ii) only 2 cards are spades ?

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

In answering a question on a multiple choice test, a student either knows the answer or

52 - 13338

53 - 13339

guesses. Let $\dfrac{3}{5}$ be the probability that he knows the answer and $\dfrac{2}{5}$ be the probability that he guesses. Assuming that a student who guesses at the answer will be correct with probability $\dfrac{1}{3}$, what is the probability that the student knows the answer given that he answered it correctly

54 - 13381

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

A bag contains 4 red and 4 black balls, another bag contains 2 red and 6 black balls. One of the two bags is selected at random and two balls are drawn at random without replacement from

the bag and are found to be both red. Find the

probability that the balls are drawn from the first

bag.

55 - 13386

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

From a lot of 15 bulbs which include 5

defectives, a sample of 2 bulbs is drawn at

random (without replacement). Find the

probability distribution of the number of

defective bulbs.

56 - 13387
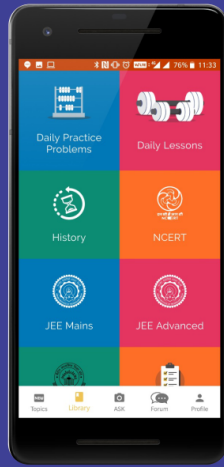
CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Probability of solving specific problem independently by A and B are $\dfrac{1}{2}$ and $\dfrac{1}{3}$ respectively. If both try to solve the problem independently, find the probability that (i) the problem is solved (ii) exactly one of them solves the problem.

57 - 13410

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Find the probability distribution of the number of

doublets in four throws of a pair of dice. Also

find the mean and variance of this distribution.

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Two numbers are selected at random (without

replacement) from positive integers

$2, 3, 4, 5, 6,$ and 7 . Let X denote the larger of

the two numbers obtained. Find the mean and

variance of the probability distribution of X .

58 - 13427

CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

Three machinesE1, E2 and E3 in a certain

factory producing electric bulbs, produce 50%,

59 - 13430

25% and 25% respectively, of the total daily output of electric bulbs. It is known that 4% of the bulbs produced by each of machines E1 and E2 are defective and that 5% of those produced by machine E3are defective. If one bulb is picked up at random from a day's production, calculate the probability that it is defective.

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CLASS 12 BOARDS: MOST IMPORTANT QUESTIONS - Chapter 13. PROBABILITY

In a game, a man wins Rs. 5 for getting a number greater than 4 and loses Rs. 1 otherwise, when a fair die is thrown. The man decided to throw a die thrice but to quit as and when he gets a number greater than 4. Find the expected value of the amount he win/loses.