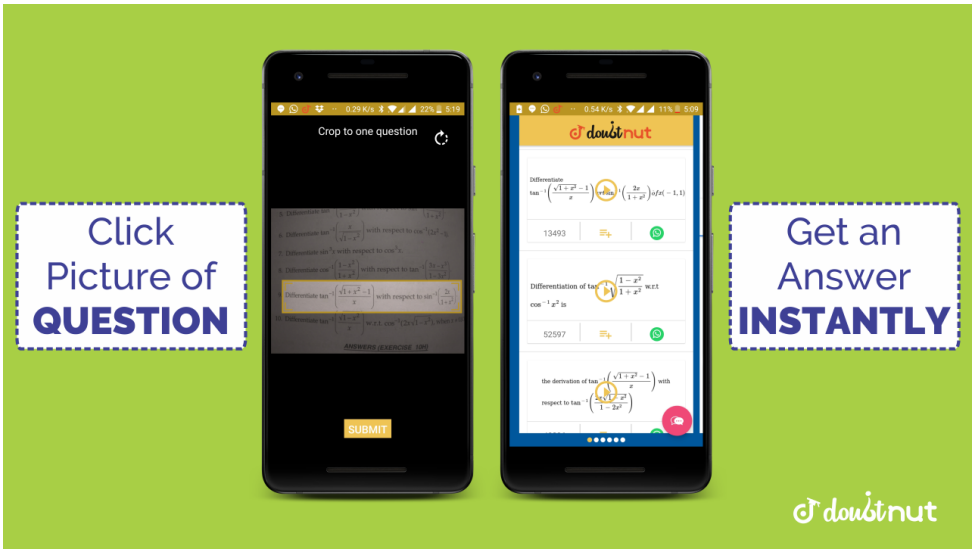
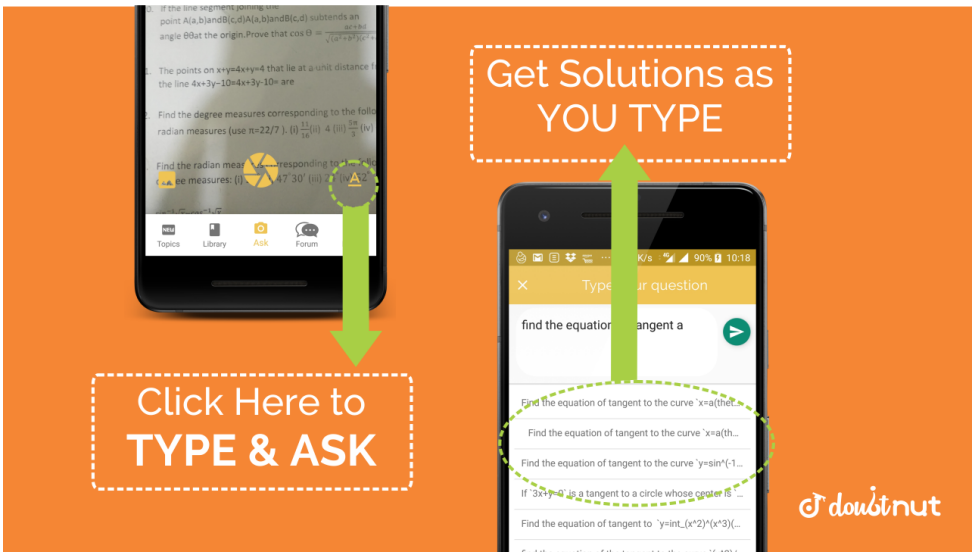
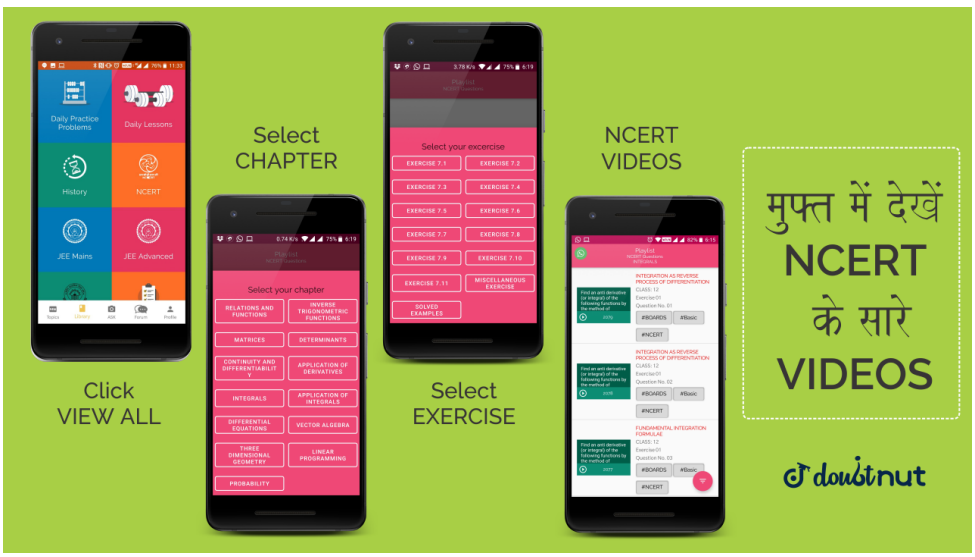
JEE Mains Super-40 Revision Series

PROBABILITY

Ques No.	Question
1 - 9865	**JEE Mains Super-40 Revision Series - PROBABILITY** Fifteen coupens are numbered $1, 2, 3, ...15$ respectively. Seven coupons are selected at random one at a time with replacement The Probability that the largest number appearing on a selected coupon is 9 is : Watch Free Video Solution on Doubtnut
2 - 10370	**JEE Mains Super-40 Revision Series - PROBABILITY** If three square are selected at random from chess board. then the probability that they form the letter 'L' is (a) $\frac{196}{64C_3}$ (b) $\frac{49}{64C_3}$ (c) $\frac{36}{64C_3}$ (d) $\frac{98}{64C_3}$ Watch Free Video Solution on Doubtnut
3 - 11648	**JEE Mains Super-40 Revision Series - PROBABILITY** If 12 identical balls are to be placed in 3 identical boxes, then the probability that one of the boxes contains exactly 3 balls is : (1) $\frac{55}{3}\left(\frac{2}{3}\right)^{11}$ (2) $55\left(\frac{2}{3}\right)^{10}$ (3) $220\left(\frac{1}{3}\right)^{12}$ (4) $22\left(\frac{1}{3}\right)^{11}$ Watch Free Video Solution on Doubtnut

4 - 13823	**JEE Mains Super-40 Revision Series - PROBABILITY** Consider $f(x) = x^3 + ax^2 + bx + c$ Parameters a, b, c are chosen as the face value of a fair dice by throwing it three times Then the probability that $f(x)$ is an invertible function is (1) $\frac{5}{36}$ (b) $\frac{8}{36}$ (c) $\frac{4}{9}$ (d) $\frac{1}{3}$ Watch Free Video Solution on Doubtnut
5 - 15181	**JEE Mains Super-40 Revision Series - PROBABILITY** If the integers m and n are chosen at random between 1 and 100, then the probability that a number of the form $7^m + 7^n$ is divisible by 5, equals (a) $\frac{1}{4}$ (b) $\frac{1}{7}$ (c) $\frac{1}{8}$ (d) $\frac{1}{49}$ Watch Free Video Solution on Doubtnut
6 - 15669	**JEE Mains Super-40 Revision Series - PROBABILITY** If two different numbers are taken from the set $(0, 1, 2, 3. 10)$: then the probability that their sum as well as absolute difference are both multiple of 4 are (a) $\frac{14}{45}$ (b) $\frac{7}{55}$ (c) $\frac{6}{55}$ (d) $\frac{12}{55}$ Watch Free Video Solution on Doubtnut
7 - 19709	**JEE Mains Super-40 Revision Series - PROBABILITY** For three events A, B and C, P (Exactly one of A or B occurs) $= P$ (Exactly one of B or C occurs) $= P$ (Exactly one of C or A occurs) $= \frac{1}{4}$ and P (All the three events occur simultaneously) $= \frac{1}{6}$. Then the probability that at least one of the events occurs, is : $\frac{7}{64}$ (2) $\frac{3}{16}$ (3) $\frac{7}{32}$ (4) $\frac{7}{16}$ Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	

8 - 20986	**JEE Mains Super-40 Revision Series - PROBABILITY** For the three events A, B and C, P(exactly one of the events A or B occurs) $= P$ (exactly one of the events B or C occurs) $= P$(exactly one of the events C or A occurs) $= p$ and P(all the three events occur simultaneously) $= p^2$, where $0 < p < \frac{1}{2}$. Then, find the probability of occurrence of at least one of the events A, B and C. Watch Free Video Solution on Doubtnut
9 - 26180	**JEE Mains Super-40 Revision Series - PROBABILITY** Three critics review a book. Odds in favour of the book are $5:2, 4:3$ and $3:4$ respectively for three critics. Find the probability that the majority are in favour of the book. Watch Free Video Solution on Doubtnut
10 - 26204	**JEE Mains Super-40 Revision Series - PROBABILITY** A bag contains n white and n red balls. Pairs of balls are drawn without replacement until the bag is empty. Show that the probability that each pair consists of one white and one red ball is $\frac{2^n}{\hat{} (2n)C_n}$ Watch Free Video Solution on Doubtnut
11 - 33940	**JEE Mains Super-40 Revision Series - PROBABILITY** The probability of India winning a test match against West Indies is $\frac{1}{2}$. Assuming independence from match to match, find the probability that in a match series India's second win occurs at the third test. Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	
12 - 33992	**JEE Mains Super-40 Revision Series - PROBABILITY** A pair of unbiased dice are rolled together till a sum of "either 5 or 7" is obtained. Then

	find the probability that 5 comes before 7. Watch Free Video Solution on Doubtnut
13 - 36435	**JEE Mains Super-40 Revision Series - PROBABILITY** Mr. A lives at origin on the Cartesian plane and has his office at $(4, 5)$ His friend lives at $(2, 3)$ on the same plane. Mrs. A can go to his office travelling one block at a time either in the $+y$ or $+x$ direction. If all possible paths are equally likely then the probability that Mr. A passed his friends house is (shortest path for any event must be considere (a) $\frac{1}{2}$ (b) $\frac{10}{21}$ (c) $\frac{1}{4}$ (d) $\frac{11}{21}$ Watch Free Video Solution on Doubtnut
14 - 36436	**JEE Mains Super-40 Revision Series - PROBABILITY** An urn contains 3 red balls and n white balls. Mr. A draws two balls together from the urn. The probability that they have the same color is 1/2 Mr. B. Draws one balls form the urn, notes its color and replaces it. He then draws a second ball from the urn and finds that both balls have the same color is 5/8. The possible value of n is 9 b. 6 c. 5 d. 1 Watch Free Video Solution on Doubtnut
15 - 36447	**JEE Mains Super-40 Revision Series - PROBABILITY** Three of six vertices of a regular hexagon are chosen at random. The probability that the triangle with three vertices is equilateral is (a) $\frac{1}{2}$ (b) $\frac{1}{5}$ (c) $\frac{1}{10}$ (d) $\frac{1}{20}$ Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	
16 - 36464	**JEE Mains Super-40 Revision Series - PROBABILITY** If A and B each toss three coins. The probability that both get the same number of heads is (a) $\frac{1}{9}$ (b) $\frac{3}{16}$ (c) $\frac{5}{16}$ (d) $\frac{3}{8}$ Watch Free Video Solution on Doubtnut

17 - 36504	**JEE Mains Super-40 Revision Series - PROBABILITY** A purse contains 2 six-sided dice. One is a normal fair die, while the other has two 1s two 3s,and two 5s. A die is picked up and rolled. Because of some secret magnetic attraction of the unfair die, there is 75% chance of picking the unfair die and a 25% chance of picking a fair die. The dice is rolled and shows up the face 3. The probability that a fair die was picked up is (a) $\frac{1}{7}$ (b) $\frac{1}{4}$ (c) $\frac{1}{6}$ (d) $\frac{1}{24}$ Watch Free Video Solution on Doubtnut
18 - 36507	**JEE Mains Super-40 Revision Series - PROBABILITY** Thirty two players ranked 1 to 32 are playing is a knockout tournament. Assume that in every match between any two players, the better ranked player wins the probability that ranked 1 and ranked 2 players are winner and runner up, respectively, is (a) $\frac{16}{31}$ (b) $\frac{1}{2}$ (c) $\frac{17}{31}$ (d) non of these Watch Free Video Solution on Doubtnut
19 - 36522	**JEE Mains Super-40 Revision Series - PROBABILITY** One hundred identical coins, each with probability p, of showing up heads are tossed once. If $0 < p < 1$ and the probability of heads showing on 50 coins is equal to that 51 coins, then value of p is, a. $\frac{1}{2}$ b. $\frac{49}{101}$ c. $\frac{50}{101}$ d. $\frac{51}{101}$ Watch Free Video Solution on Doubtnut
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20 - 36525	**JEE Mains Super-40 Revision Series - PROBABILITY** An unbiased die with faced marked $1, 2, 3, 4, 5,$ and 6 is rolled four times. Out of four face value obtained, the probability that the minimum face value is not less than 2 and the maximum face value is not greater than five is then (a) $\frac{16}{81}$ (b) $\frac{1}{81}$ (c) $\frac{80}{81}$ (d) $\frac{65}{81}$

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21 - 36531	**JEE Mains Super-40 Revision Series - PROBABILITY** Two numbers are selected randomly from the set $S = \{1, 2, 3, 4, 5, 6\}$ without replacement one by one. The probability that minimum of the two numbers is less than 4 is (a) $\frac{1}{15}$ (b) $\frac{14}{15}$ (c) $\frac{1}{5}$ (d) $\frac{4}{5}$ Watch Free Video Solution on Doubtnut
22 - 36535	**JEE Mains Super-40 Revision Series - PROBABILITY** If three distinct number are chosen randomly from the first 100 natural numbers, then the probability that all three of them are divisible by both $2 \text{ and } 3$ is (a) $\frac{4}{25}$ (b) $\frac{4}{35}$ (c) $\frac{4}{33}$ (d) $\frac{4}{1155}$ Watch Free Video Solution on Doubtnut
23 - 36582	**JEE Mains Super-40 Revision Series - PROBABILITY** Let ω be a complex cube root unity with $\omega \neq 1$. A fair die is thrown three times. If $r_1, r_2 \text{ and } r_3$ are the numbers obtained on the die, then the probability that $\omega^{r1} + \omega^{r2} + \omega^{r3} = 0$ is (a) $\frac{1}{18}$ (b) $\frac{1}{9}$ (c) $\frac{2}{9}$ (d) $\frac{1}{36}$ Watch Free Video Solution on Doubtnut
	
24 - 36588	**JEE Mains Super-40 Revision Series - PROBABILITY** Four person independently solve a certain problem correctly with probabilities $\frac{1}{2}, \frac{3}{4}, \frac{1}{4}, \frac{1}{8}$. Then the probability that he problem is solve correctly by at least one of them is $\frac{235}{256}$ b. $\frac{21}{256}$ c. $\frac{3}{256}$ d. $\frac{253}{256}$

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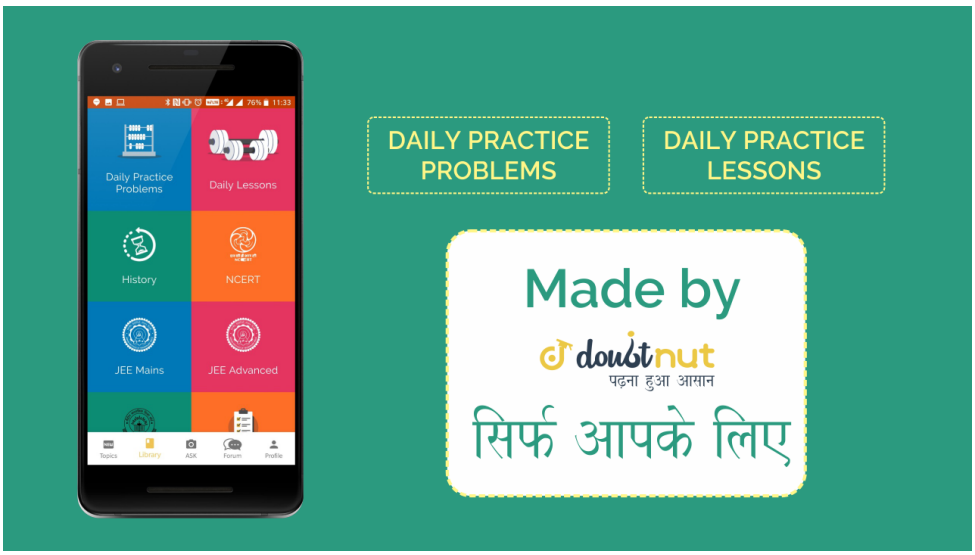
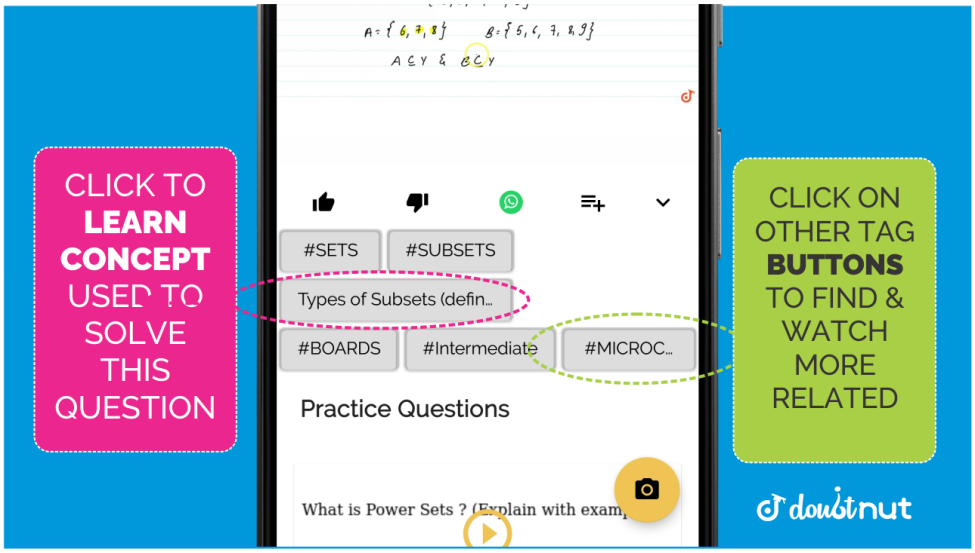
25 - 36590	**JEE Mains Super-40 Revision Series - PROBABILITY** A box contains 24 identical balls of which 12 are white and 12 are black. The balls are drawn at random from the box one at a time with replacement. The probability that a white ball is drawn for the 4th time on the 7th draw is (a) $\frac{5}{64}$ (b) $\frac{27}{32}$ (c) $\frac{5}{32}$ (d) $\frac{1}{2}$ Watch Free Video Solution on Doubtnut
26 - 36592	**JEE Mains Super-40 Revision Series - PROBABILITY** A six-faced fair dice is shown until 1 comes. Then the probability that 1 comes in even number of trials is (a) $\frac{1}{6}$ (b) $\frac{1}{36}$ (d) $\frac{1}{18}$ (d) $\frac{3}{28}$ Watch Free Video Solution on Doubtnut
27 - 36620	**JEE Mains Super-40 Revision Series - PROBABILITY** A composite number is selected at random from the first 30 natural numbers and it is divided by 5. The probability that there will be remainder is (a) $\frac{14}{19}$ (b) $\frac{5}{19}$ (c) $\frac{5}{6}$ (d) $\frac{7}{15}$ Watch Free Video Solution on Doubtnut
	
28 - 36652	**JEE Mains Super-40 Revision Series - PROBABILITY** Two numbers x and y are chosen at random (without replacement) from among the numbers $1, 2, 3, 2004$. The probability that $x^3 + y^3$ is divisible by 3 is (a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{6}$ (d) $\frac{1}{4}$ Watch Free Video Solution on Doubtnut
29 - 36722	**JEE Mains Super-40 Revision Series - PROBABILITY**

	Let A, B, C be three mutually independent events. Consider the two statements $S_1 and S_2$. $S_1: A and B \cup C$ are independent $S_2: A and B \cap C$ are independent Then, a. both $S_1 and S_2$ are true b. only S_1 is true c. only S_2 is true d. neither $S_1 n$ or S_2 is true Watch Free Video Solution on Doubtnut
30 - 36754	**JEE Mains Super-40 Revision Series - PROBABILITY** In a $n-$ sided regular polygon, the probability that the two diagonal chosen at random will intersect inside the polygon is a. $\frac{2^n C_2}{\hat{}\left(\hat{}\left(n C_{2-n}\right)\right) C_2}$ b. $\frac{n(n-1) C_2}{\hat{}\left(\hat{}\left(n C_{2-n}\right)\right) C_2}$ c. $\frac{\hat{} n C_4}{\hat{}\left(\hat{}\left(n C_{2-n}\right)\right) C_2}$ d. none of these Watch Free Video Solution on Doubtnut
31 - 36804	**JEE Mains Super-40 Revision Series - PROBABILITY** One mapping is selected at random from all mappings of the set $S=\{1,2,3, n\}$ into itself. If the probability that the mapping is one-one is 3/32, then the value of n is 2 b. 3 c. 4 d. none of these Watch Free Video Solution on Doubtnut
	
32 - 36846	**JEE Mains Super-40 Revision Series - PROBABILITY** A coin is tossed $2n$ times. The chance that the number of times one gets head is not equal to the number of times one gets tails is $\frac{(2n!)}{(n!)^2}\left(\frac{1}{2}\right)^{2n}$ b. $1-\frac{(2n!)}{(n!)^2}$ c. $1-\frac{(2n!)}{(n!)^2}\frac{1}{(4^n)}$ d. none of these Watch Free Video Solution on Doubtnut
33 - 36852	**JEE Mains Super-40 Revision Series - PROBABILITY**

	In a game a coin is tossed $2n+m$ times and a player wins if he does not get any two consecutive outcomes same for at least $2n$ times in a row. The probability that player wins the game is $\frac{m+2}{2^{2n}+1}$ b. $\frac{2n+2}{2^{2n}}$ c. $\frac{2n+2}{2^{2n+1}}$ d. $\frac{m+2}{2^{2n}}$ Watch Free Video Solution on Doubtnut
34 - 52754	**JEE Mains Super-40 Revision Series - PROBABILITY** Three boys and two girls stand in a queue. The probability, that the number of boys ahead is at least one more than the number of girls ahead of her, is (a) $/2$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$ Watch Free Video Solution on Doubtnut
35 - 53059	**JEE Mains Super-40 Revision Series - PROBABILITY** A signal which can be green or red with probability $\frac{4}{5}$ and $\frac{1}{5}$ respectively, is received by station A and then and 3 transmitted to station B. The probability of each station receiving the signal correctly is $\frac{3}{4}$ If the signal received at station B is green, then the probability that the original signal was green is (a) $\frac{3}{5}$ (b) $\frac{6}{7}$ (d) $\frac{20}{23}$ (d) $\frac{9}{20}$ Watch Free Video Solution on Doubtnut
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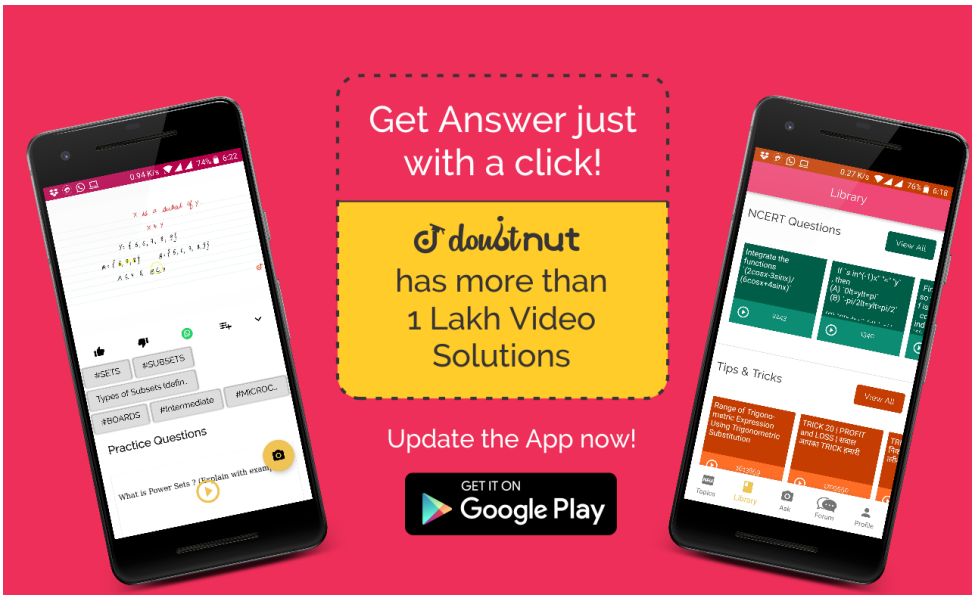
36 - 78826	**JEE Mains Super-40 Revision Series - PROBABILITY** India plays two matches each with West Indies and Australia. In any match the probabilities of India getting points $0, 1$ and 2 are $0.45, 0.05$ and 0.50 respectively. Assuming that the outcomes are independent, the probability of India getting at least 7 points is (a) 0.8750 (b) 0.0875 (c) 0.0625 (d) 0.0250 Watch Free Video Solution on Doubtnut

37 - 145953	**JEE Mains Super-40 Revision Series - PROBABILITY** Let E^c denote the complement of an event E. Let E, F, G be pairwise independent events with $P(G) > 0$ and $P(E \cap F \cap G) = 0$ Then $P(E^c \cap F^c \cap G)$ equals (a) $P(E^c) + P(F^c)$ (b) $P(E^c) - P(F^c)$ (c) $P(E^c) - P(F^{\square})$ (d) $P(E) - P(F^c)$ Watch Free Video Solution on Doubtnut
38 - 183705	**JEE Mains Super-40 Revision Series - PROBABILITY** One Indian and four American men and their wives are to be seated randomly around a circular table. Then the conditional probability that the Indian man is seated adjacent to his wife given that each American man is seated adjacent to his wife is Watch Free Video Solution on Doubtnut
39 - 314983	**JEE Mains Super-40 Revision Series - PROBABILITY** Three identical dice are rolled once. The probability that the same number will appear on each of them, is (a) $\frac{1}{6}$ (b) $\frac{1}{36}$ (c) $\frac{1}{18}$ (d) $\frac{3}{28}$ Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	
40 - 1241989	**JEE Mains Super-40 Revision Series - PROBABILITY** A bag contains 4 red and 6 blach balls O balls is drawn at random from the bag, its colour is observed and this ball along with two addibonal balls of the same colour are returnted to the bag, then the probabilaty then the drawn ball is red, is Watch Free Video Solution on Doubtnut
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