$$P(AB) = \frac{m_1 m_2}{(m_1+n_1)(m_2+n_2)} = \frac{m_1}{m_1+n_1} \cdot \frac{m_2}{m_2+n_2} = P(A) \cdot P(B)$$

Proved.

Example 6. *An article manufactured by a company consists of two parts A and B. In the process of manufacture of part A, 9 out of 100 are likely to be defective. Similarly, 5 out of 100 are likely to be defective in the manufacture of part B. Calculate the probability that the assembled article will not be defective (assuming that the events of finding the part A non-defective and that of B are independent).*

Solution. Probability that part A will be defective $= \dfrac{9}{100}$

Probability that part A will not be defective $= \left(1 - \dfrac{9}{100}\right) = \dfrac{91}{100}$

Probability that part B will be defective $= \dfrac{5}{100}$

Probability that part B will not be defective $= \left(1 - \dfrac{5}{100}\right) = \dfrac{95}{100}$

Probability that the assembled article will not be defective = (Probability that part A will not be defective) × (Probability that part B will not be defective)

$$= \left(\frac{91}{100}\right) \times \left(\frac{95}{100}\right) = 0.8645$$

Ans.

Example 7. *The probability that machine A will be performing an usual function in 5 years' time is $\frac{1}{4}$, while the probability that machine B will still be operating usefully at the end of the same period, is $\frac{1}{3}$*

Find the probability in the following cases that in 5 years time :

(i) Both machines will be performing an usual function.

(ii) Neither will be operating.

(iii) Only machine B will be operating.

(iv) At least one of the machines will be operating.

Solution. P (A operating usefully) $= \dfrac{1}{4}$, so $q(A) = 1 - \dfrac{1}{4} = \dfrac{3}{4}$

P (B operating usefully) $= \dfrac{1}{3}$, so $q(B) = 1 - \dfrac{1}{3} = \dfrac{2}{3}$

(*i*) P (Both A and B will operate usefully) $= P(A).\,P(B) = \left(\dfrac{1}{4}\right) \times \left(\dfrac{1}{3}\right) = \dfrac{1}{12}$

(*ii*) P (Neither will be operating) $= q(A).\,q(B) = \left(\dfrac{3}{4}\right)\left(\dfrac{2}{3}\right) = \dfrac{1}{2}$

(*iii*) P (Only B will be operating) $= P(B) \times q(A) = \left(\dfrac{1}{3}\right) \times \left(\dfrac{3}{4}\right) = \dfrac{1}{4}$

(*iv*) P (At least one of the machines will be operating) $= 1 - P$ (none of them operates)

$$= 1 - \frac{1}{2} = \frac{1}{2}$$

Ans.

Example 8. *There are two groups of subjects one of which consists of 5 science and 3 engineering subjects and the other consists of 3 science and 5 engineering subjects. An unbiased* *die is cast. If number 3 or number 5 turns up, a subject is selected at random from the first group, otherwise the subject is selected at random from the second group. Find the probability that an engineering subject is selected ultimately.*

(A.M.I.E.T.E., Summer 2000)

Solution. Probability of turning up 3 or 5 $= \frac{2}{6} = \frac{1}{3}$

Probability of selecting engineering subject from first group $= \frac{3}{8}$

Now the probability of selecting engineering subject from first group on turning up 3 or 5

$$= \left(\frac{1}{3}\right) \times \left(\frac{3}{8}\right) = \frac{1}{8} \quad \ldots (1)$$

Probability of not turning up 3 or 5 $= 1 - \frac{1}{3} = \frac{2}{3}$

Probability of selecting engineering subject from second group $= \frac{5}{8}$

Now probability of selecting engineering subject from second group on not turning up 3 or 5

$$= \frac{2}{3} \times \frac{5}{8} = \frac{5}{12} \quad \ldots (2)$$

Probability of the selection of engineering subject $= \frac{1}{8} + \frac{5}{12}$ [From (1) and (2)]

$$= \frac{13}{24}$$ **Ans.**

Example 9. *An urn contains nine balls, two of which are red, three blue and four black. Three balls are drawn from the urn at random. What is the probability that*

(*i*) *the three balls are of different colours?*

(*ii*) *the three balls are of the same colour?* (A.M.I.E., Summer 2000)

Solution.

Urn contains 2 Red balls, 3 Blue balls and 4 Black balls.

(*i*) Three balls will be of different colours if one ball is red, one blue and one black ball are drawn.

$$\text{Required probability} = \frac{{}^2C_1 \times {}^3C_1 \times {}^4C_1}{{}^9C_3} = \frac{2 \times 3 \times 4}{84} = \frac{2}{7}$$ **Ans.**

(*ii*) Three balls will be of the same colour if either 3 blue balls or 3 black balls are drawn.

P (3 Blue balls or 3 Black balls) $= P$ (3 Blue balls) $+ P$ (3 Black balls)

$$= \frac{{}^3C_3}{{}^9C_3} + \frac{{}^4C_3}{{}^9C_3} = \frac{1+4}{84} = \frac{5}{84}$$ **Ans.**

Example 10. *A bag contains 10 white and 15 black balls. Two balls are drawn in succession. What is the probability that first is white and second is black?*

Solution. Probability of drawing one white ball $= \frac{10}{25}$

Probability of drawing one black ball without replacement = 15/24

Required probability of drawing first white ball and second black ball

$$= \frac{10}{25} \times \frac{15}{24} = \frac{1}{4}$$ **Ans.**

Example 11. *A committee is to be formed by choosing two boys and four girls out of a group of five boys and six girls. What is the probability that a particular boy named A and a particular girl named B are selected in the committee?*

Solution. Two boys are to be selected out of 5 boys. A particular boy A is to be included in the committee. It means that only 1 boy is to be selected out of 4 boys.
Number of ways of selection $= {}^4C_1$
Similarly a girl B is to be included in the committee.
Then only 3 girls are to be selected out of 5 girls.
Number of ways of selection $= {}^5C_3$

$$\text{Required probability} = \frac{{}^4C_1 \times {}^5C_3}{{}^5C_2 \times {}^6C_4} = \frac{4 \times 10}{10 \times 15} = \frac{4}{15}$$

Ans.

Example 12. *Three groups of children contain respectively 3 girls and 1 boy; 2 girls and 2 boys; 1 girl and 3 boys. One child is selected at random from each group. Find the chance of selecting 1 girl and 2 boys.*

Solution. There are three ways of selecting 1 girl and two boys.

I way : Girl is selected from first group, boy from second group and second boy from third group.

$$\text{Probability of the selection of (Girl + Boy + Boy)} = \frac{3}{4} \times \frac{2}{4} \times \frac{3}{4} = \frac{18}{64}$$

II way : Boy is selected from first group, girl from second group and second boy from third group.

$$\text{Probability of the selection of (Boy + Girl + Boy)} = \frac{1}{4} \times \frac{2}{4} \times \frac{3}{4} = \frac{6}{64}$$

III way : Boy is selected from first group, second boy from second group and the girl from the third group.

$$\text{Probability of selection of (Boy + Boy + Girl)} = \frac{1}{4} \times \frac{2}{4} \times \frac{1}{4} = \frac{2}{64}$$

$$\text{Total probability} = \frac{18}{64} + \frac{6}{64} + \frac{2}{64} = \frac{26}{64} = \frac{13}{32}$$

Ans.

Example 13. *The number of children in a family in a region are either 0, 1 or 2 with probability 0.2, 0.3 and 0.5 respectively. The probability of each child being a boy or girl 0.5. Find the probability that a family has no boy.*

Solution. Here there are three types of families

(*i*) Probability of zero child (boys) $= 0.2$

(*ii*)

Boy	Girl
0	1
1	0

Probability of zero boy in case II $= 0.3 \times 0.5 = 0.15$

(*iii*)

Boy	Girl
0	2
1	1
2	0

In this case probability of zero boy $= 0.5 \times \frac{1}{3} = 0.167$

Considering all the three cases, the probability of zero boy
$= 0.2 + 0.15 + 0.167 = 0.517$

Ans.

Example 14. *A husband and wife appear in an interview for two vacancies in the same post. The probability of husband's selection is $\frac{1}{7}$ and that of wife's selection is $\frac{1}{5}$. What is the probability that*

(i) both of them will be selected. (ii) only one of them will be selected, and
(iii) none of them will be selected ?

Solution. P (husband's selection) $= \frac{1}{7}$, P (wife's selection) $= \frac{1}{5}$

(*i*) P (both selected) $= \frac{1}{7} \times \frac{1}{5} = \frac{1}{35}$

(*ii*) P (only one selected) = P (only husband's selection) + P (only wife's selection)

$$= \frac{1}{7} \times \frac{4}{5} + \frac{1}{5} \times \frac{6}{7} = \frac{10}{35} = \frac{2}{7}$$

(*iii*) P (none of them will be selected) $= \frac{6}{7} \times \frac{4}{5} = \frac{24}{35}$ **Ans.**

Example 15. *A problem of statistics is given to three students A, B and C whose chances of solving it are $\frac{1}{2}$, $\frac{3}{4}$ and $\frac{1}{4}$ respectively. What is the probability that the problem will be solved?*

Solution. The probability that A can solve the problem $= \frac{1}{2}$

The probability that A cannot solve the problem $= 1 - \frac{1}{2}$.

Similarly the probability that B and C cannot solve the problem are

$$\left(1 - \frac{3}{4}\right) \text{ and } \left(1 - \frac{1}{4}\right)$$

$\therefore$ The probability that A, B, C cannot solve the problem

$$= \left(1 - \frac{1}{2}\right) \times \left(1 - \frac{3}{4}\right) \times \left(1 - \frac{1}{4}\right) = \frac{1}{2} \times \frac{1}{4} \times \frac{3}{4} = \frac{3}{32}$$

Hence, the probability that the problem can be solved $= 1 - \frac{3}{32} = \frac{29}{32}$ **Ans.**

Example 16. *A student takes his examination in four subjects α, β, γ, δ. He estimates his chances of passing in α as $\frac{4}{5}$, in β as $\frac{3}{4}$, in γ as $\frac{5}{6}$ and in δ as $\frac{2}{3}$. To qualify, he must pass in α and at least two other subjects. What is the probability that he qualifies?* **(AMIETE, Dec. 2010)**

Solution. $P(\alpha) = \frac{4}{5}$, $P(\beta) = \frac{3}{4}$, $P(\gamma) = \frac{5}{6}$, $P(\delta) = \frac{2}{3}$.

There are four possibilities of passing at least two subjects.

(*i*) Probability of passing β, γ and failing δ $= \frac{3}{4} \times \frac{5}{6} \times \left(1 - \frac{2}{3}\right) = \frac{3}{4} \times \frac{5}{6} \times \frac{1}{3} = \frac{5}{24}$

(*ii*) Probability of passing γ, δ and failing β $= \frac{5}{6} \times \frac{2}{3} \times \left(1 - \frac{3}{4}\right) = \frac{5}{6} \times \frac{2}{3} \times \frac{1}{4} = \frac{5}{36}$

(*iii*) Probability of passing δ, β and failing γ $= \frac{2}{3} \times \frac{3}{4} \times \left(1 - \frac{5}{6}\right) = \frac{2}{3} \times \frac{3}{4} \times \frac{1}{6} = \frac{1}{12}$

(*iv*) Probability of passing $\beta, \gamma, \delta = \frac{3}{4}\times\frac{5}{6}\times\frac{2}{3} = \frac{5}{12}$

Probability of passing at least two subjects $= \frac{5}{24}+\frac{5}{36}+\frac{1}{12}+\frac{5}{12} = \frac{61}{72}$

Probability of passing α and at least two subjects. $= \frac{4}{5}\times\frac{61}{72} = \frac{61}{90}$ **Ans.**

Example 17. *There are 6 positive and 8 negative numbers. Four numbers are chosen at random, without replacement, and multiplied. What is the probability that the product is a positive number ?*

Solution. To get from the product of four numbers, a positive number, the possible combinations are as follows :

S. No.	Out of 6 Positive Numbers	Out of 8 Negative Numbers	Positive Numbers
1.	4	0	${}^6C_4 \times {}^8C_0 = \frac{6\times5}{1\times2}\times1 = 15$
2.	2	2	${}^6C_2 \times {}^8C_2 = \frac{6\times5}{1\times2}\times\frac{8\times7}{1\times2} = 420$
3.	0	4	${}^6C_0 \times {}^8C_4 = 1\times\frac{8\times7\times6\times5}{1\times2\times3\times4} = 70$
			Total = 505

$$\text{Probability} = \frac{{}^6C_4\times{}^8C_0 + {}^6C_2\times{}^8C_2 + {}^6C_0\times{}^8C_4}{{}^{14}C_4} = \frac{15+420+70}{\frac{14\times13\times12\times11}{1\times2\times3\times4}} = \frac{505\times4\times3\times2\times1}{14\times13\times12\times11} = \frac{505}{1001}$$ **Ans.**

Example 18. *A can hit a target 3 times in 5 shots, B 2 times in 5 shots and C three times in 4 shots. All of them fire one shot each simultaneously at the target. What is the probability that*

(i) 2 shots hit *(ii) At least two shots hit?*

Solution. Probability of A hitting the target $= \frac{3}{5}$

Probability of B hitting the target $= \frac{2}{5}$

Probability of C hitting the target $= \frac{3}{4}$

Probability that 2 shots hit the target

$$= P(A)\,P(B)\,q(C) + P(A)\,P(C)\,q(B) + P(B)\,P(C)\,q(A)$$

$$= \frac{3}{5}\times\frac{2}{5}\times\left(1-\frac{3}{4}\right)+\frac{3}{5}\times\frac{3}{4}\times\left(1-\frac{2}{5}\right)+\frac{2}{5}\times\frac{3}{4}\times\left(1-\frac{3}{5}\right) = \frac{6}{25}\times\frac{1}{4}+\frac{9}{20}\times\frac{3}{5}+\frac{6}{20}\times\frac{2}{5}$$

$$= \frac{6+27+12}{100} = \frac{45}{100} = \frac{9}{20}$$ **Ans.**

(*ii*) Probability of at least two shots hitting the target

= Probability of 2 shots + probability of 3 shots hitting the target

$$= \frac{9}{20} + P(A)\,P(B)\,P(C) = \frac{9}{20}+\frac{3}{5}\times\frac{2}{5}\times\frac{3}{4} = \frac{63}{100}$$ **Ans.**

$$\frac{\quad}{1-q_1q_2} = \frac{\frac{\quad}{36}}{1-\frac{31}{36}\times\frac{5}{6}} = \frac{5}{36}\times\frac{36\times 6}{61} = \frac{31}{61}$$

Probability of B's winning $= q_1p_2 + q_1^2q_2p_2 + q_1^3q_2^2p_2 + \ldots\ldots$

$$= \frac{q_1p_2}{1-q_1q_2} = \frac{\frac{31}{36}\times\frac{1}{6}}{1-\left(\frac{31}{36}\right)\left(\frac{5}{6}\right)} = \frac{31}{36\times 6}\times\frac{36\times 6}{61} = \frac{30}{61}$$

Ans.

EXERCISE 61.2

1. The probability that Nirmal will solve a problem is $\frac{2}{3}$ and the probability that Satyajit will solve it is $\frac{3}{4}$. What is the probability that (*a*) the problem will be solved (*b*) neither can solve it.
   Ans. (*a*) $\frac{11}{12}$, (*b*) $\frac{1}{12}$
2. An urn contains 13 balls numbering 1 to 13. Find the probability that a ball selected at random is a ball with number that is a multiple of 3 or 4.
   Ans. $\frac{6}{13}$
3. Four persons are chosen at random from a group containing 3 men, 2 women, and 4 children. Show that the probability that exactly two of them will be children is $\frac{10}{21}$.
4. A five digit number is formed by using the digits 0, 1, 2, 3, 4 and 5 without repetition. Find the probability that the number is divisible by 6.
   Ans. $\frac{4}{25}$
5. The chances that doctor A will diagnose a disease X correctly is 60%. The chances that a patient will die by his treatment after correct diagnosis is 40% and the chances of death by wrong diagnosis is 70%. A patient of doctor A, who had disease *X*, died, what is the chance that his disease was diagnosed correctly.
   Ans. $\frac{6}{13}$.
6. An anti-aircraft gun can take a maximum of four shots on enemy's plane moving from it. The probabilities of hitting the plane at first, second, third and fourth shots are 0.4, 0.3, 0.2 and 0.1 respectively. Find the probability that the gun hits the plane.
   Ans. 0.6976.
7. An electronic component consists of three parts. Each part has probability 0.99 of performing satisfactorily. The component fails if two or more parts do not perform satisfactorily. Assuming that the parts perform independently, determine the probability that the component does not perform satisfactorily.
   Ans. 0.000298
8. The face cards are removed from a full pack. Out of the remaining 40 cards, 4 are drawn at random. What is the probability that they belong to different suits?
   Ans. $\frac{1000}{9139}$
9. Of the cigarette smoking population, 70% are men and 30% women, 10% of these men and 20% of these women smoke 'WILLS.' What is the probability that a person seen smoking a 'WILLS' will be a man.
   Ans. $\frac{7}{13}$
10. A machine contains a component *C* that is vital to its operation. The reliability of component *C* is 80%. To improve the reliability of a machine, a similar component is used in parallel to form a system S. The machine will work provided that one of these components functions correctly. Calculate the reliability of th
   Ans. 96%

$\therefore \qquad P(A) = \dfrac{180+175+210+280}{12\times 13\times 13} = \dfrac{845}{2028}$.

Example 21. *A is one of 6 horses entered for a race, and is to be ridden by ... Jockeys B and C. It is 2 to 1 that B rides A in which case all the horses are equally ... win; if C rides A his chance is trebled. What are the odds against his winning?* (Vikram ...)

Solution : Given P (Jockey B rides horse A)

$$= \frac{2}{2+1} = \frac{2}{3}$$

and in this case all six horses are equally likely to win.

$$\therefore P(A \text{ wins when } B \text{ rides}) = \frac{2}{3} \times \frac{1}{6} = \frac{1}{9}$$

Again, P (Jockey C rides the horse A)

$$= \frac{1}{2+1} = \frac{1}{3}$$

and in this case the chance of A's winning being trebled *i.e.*

$$3 \times \frac{1}{6} = \frac{3}{6}.$$

$$\therefore P(A \text{ wins when } C \text{ rides}) = \frac{1}{3} \times \frac{3}{6} = \frac{1}{6}$$

From (1) and (2), the two events are mutually exclusive.

Hence $\qquad P(A \text{ wins}) = \dfrac{1}{6} + \dfrac{1}{9} = \dfrac{5}{18} = \dfrac{5}{5+13}$.

$\therefore$ Odds against A's winning are 13 to 5.

Example 22. *In each of a set of games it is 2 to 1 in favour the winner of the ... game. What is the chance that the player who wins the first game shall win, at least ... out of the next four games ?* (Jiwaji ...)

Solution : In each of a set of games it is 2 to 1 in favour of the winning previous game

$\Rightarrow P$ (winning a game/he has won the previous game)

$$= \frac{2}{2+1} = \frac{2}{3} = P(W/W), \text{ say}$$

$$\therefore \qquad P(W^C/W) = 1 - \frac{2}{3} = \frac{1}{3},\ P(W/W^C) = \frac{1}{3}$$

and $\qquad (W^C/W^C) = \dfrac{2}{3}, \quad$ where $\quad W =$ he wins, Thus

$$P(A_1) = \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} = \frac{16}{81}$$

$$P(A_2) = \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{1}{3} = \frac{8}{81}$$

$$P(A_3) = \frac{2}{3} \times \frac{2}{3} \times \frac{1}{3} \times \frac{1}{3} = \frac{4}{81}$$

$$P(A_4) = \frac{2}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{2}{3} = \frac{4}{81}$$

$$P(A_5) = \frac{1}{3} \times \frac{1}{3} \times \frac{2}{3} \times \frac{2}{3} = \frac{4}{81}$$

Hence the required probability

$$P(A) = P(A_1) + P(A_2) + P(A_3) + P(A_4) + P(A_5)$$

$$= \frac{36}{81} = \frac{4}{9}.$$

Example 23. *An urn contains four tickets marked with number 112, 121, 211, 222. One ticket is drawn at random. If A_i $(i = 1, 2, 3)$ is the event that i th digit of the number of the ticket drawn is 1, then discuss the independence of A_1, A_2, A_3.*

Solution : Here

$$S = \{112, 121, 211, 222\}$$

$$A_1 = \{112, 121\}, \text{ first digit is 1}$$

$$A_2 = \{112, 211\}, \text{ second digit is 1}$$

$$A_3 = \{121, 211\}, \text{ third digit is 1}$$

$\therefore$

$$(A_1 \cap A_2) = \{112\}$$

$$(A_2 \cap A_3) = \{211\}$$

$$(A_1 \cap A_3) = \{121\}$$

$$(A_1 \cap A_2 \cap A_3) = \phi.$$

Thus nothing can be said about the independence of A_1, A_2, A_3 as the problem of independence or dependence arises when the events can occur together i.e. they have at least one point in common.

Now,

$$P(A_1) = \frac{2}{4}, P(A_2) = \frac{2}{4}, P(A_3) = \frac{2}{4}$$

$\therefore \quad P(A_1 \cap A_2) = \frac{1}{4} = P(A_1)\,P(A_2)$

Similarly, $\quad P(A_2 \cap A_3) = \frac{1}{4} = P(A_2)\,P(A_3)$

$P(A_1 \cap A_3) = \frac{1}{4} = P(A_1)\,P(A_3).$

But $\quad P(A_1 \cap A_2 \cap A_3) = 0 \neq P(A_1)\,P(A_2)\,P(A_3).$

Thus A_1, A_2, A_3 are pairwise independent but not mutually independent.

Exercise 1 (D)

1. If A and B are two events, where $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$ ... following :
   (i) $P\ A/B)$ (ii) $P(B/A)$ (iii) $P(A \cup B)$
2. Let A and B be the events with $P(A) = \frac{3}{8}$, $P(B) = \frac{5}{8}$ and $P(A \cup B) = \frac{3}{4}$. Find
   (i) $P(A \cap B)$ (ii) $P(A/B)$ (iii) $P(B/A)$.
3. Comment on the following statements :
   (i) $P(A/B) + P(\bar{A}/B) = 1.$
   (ii) $P(A/B) + P(A/\bar{B}) = 1.$
4. The event E_1 is a sub-event of E_2; *i.e.* if E_1 occurs then E_2 certainly occurs but if E_1 ... may or may not occur. You are also given that $0 < P(E_1) < 1$; $0 < P(E_2) < 1$ ... increasing order of magnitude, using less than signs and equality signs when appr... following quantities,
   $$P(E_1 + E_2),\ P(E_2/E_1),\ P(E_1 E_2),\ 0,\ 1,\ P(E_1),\ P(E_2).$$
5. A can solve 75% of the problems in a book, B can solve 70%. What is the prob... either A or B can solve a problem chosen at random ?
6. A die is thrown once. What is the conditional probability that a multiple of three is ... when it is known that it is an even number.
7. For n independent events A_i $(i = 1, 2, \ldots, n)$ with respective probability of occurren... the probability of the event of happening at least one of them.

   or

   The probability of N independent events are $p_1, p_2, \ldots, p_n$. Find an expression for the p... that at least one of the events will happen.
8. Two uniform dice each marked with numbers 1, 2, 3, 4, 5, 6 on their faces, are toss... that the probability of the total of the numbers thrown up, exceeding 9 is $\frac{1}{6}$. H... probability altered if it is known that the total is an even number ?
9. A and B throw alternately with a pair of dice. The one who throws 9 first wins. Show ... has the first throw their chances of winning are 9 : 8. **(Bhopal 1992; Jabalpur 90; J...**
10. Three balls are drawn successively from a box containing 6 red, 4 white and 5 blue b... the probability that they are drawn in the ordered, white and blue of each ball is (i) ... (ii) not replaced.
11. Find the chance of drawing a king, a queen and a knave in that order from a pack of ...

13. The face cards (thre... cards, 4 are drawn ...
    (a) What is the p...
    (b) What is the p... denomination...
14. In shuffling a pack ... cards should be fr...
15. The odds that a bo... 3 and 3 to 4 respe... favourable ?
16. The odds against ... same problem are...
17. A problem in stat... $\frac{1}{3}$, $\frac{1}{4}$ respective...
18. In a bag there ar... without replacem...
19. The odds agains... of the former ar...
20. A coin is tossed...
21. There are three ... are placed on a ... together is $\frac{3}{140}$ ...
22. There are two ... white balls. O... drawing a red ...
23. One purse con... One purse is ta...
24. One bag conta... and 9 black ba... the same colo...
25. In an urn ther... ball is drawn ... urn. Show tha...
26. An urn contai... toy is transfer... urn. hat is the...
27. A can hit a ta... volley. What ...
28. Explain the ...
    (i) Simple a...
    (ii) Mutuall...
    Are the mut...
29. It is 8 : 5 ag... 50 livi...