ONLINE MATHS CLASS - X – 40 (06 / 10 /2020)

(1) *In class* 10 *A , there are* 20 *boys and* 20 *girls . In* 10 *B , there are* 15 *boys and* 25 *girls .*

One student is to be selected from each class .

a) *What is the probability of both being girls ?*

b) *What is the probability of both being girl ?*

c) *What is the probability of one boy and one girl ?*

d) *What is the probability of at least one boy ?*

Answer .

	10 A	10 B
Number of boys	20	15
Number of girls	20	25
Total number of students	40	40

Total number of outcomes = 40 x 40 = 1600

a) *Number of favourable outcomes* = 20 x 25 = 500

Probability of both being girls = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{500}{1600} = \frac{5}{16}$

b) *Number of favourable outcomes* = 20 x 15 = 300

Probability of both being boys = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{300}{1600} = \frac{3}{16}$

c) *Number of favourable outcomes* = 20 x 25 + 20 x 15 = 500 + 300 = 800

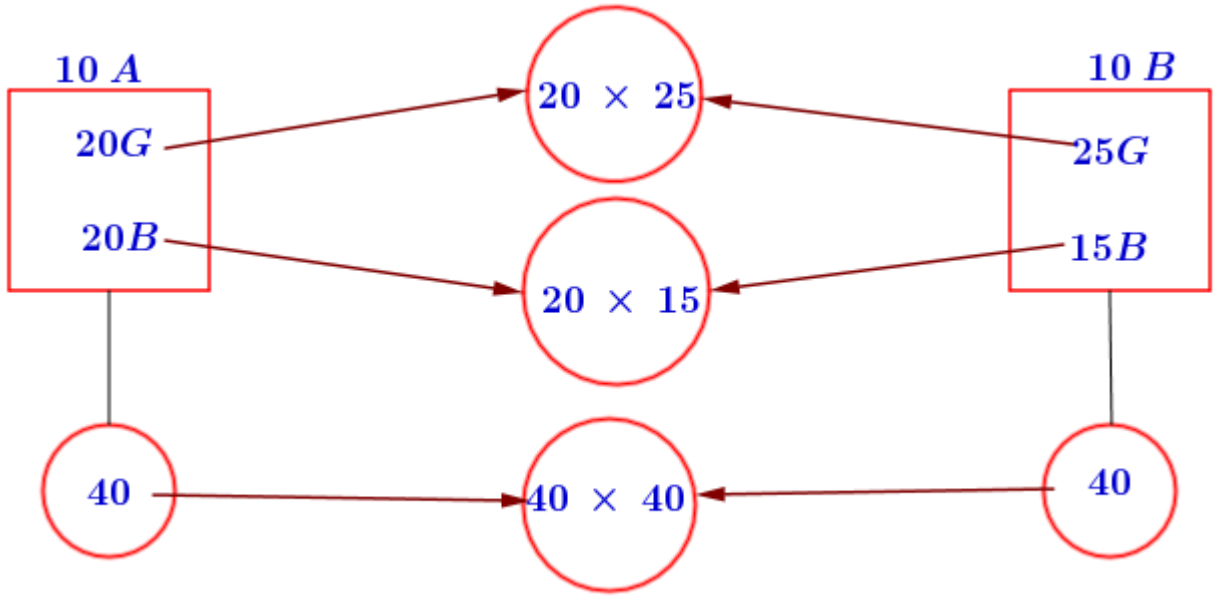
Probability of one boy and one girl = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{800}{1600} = \frac{1}{2}$

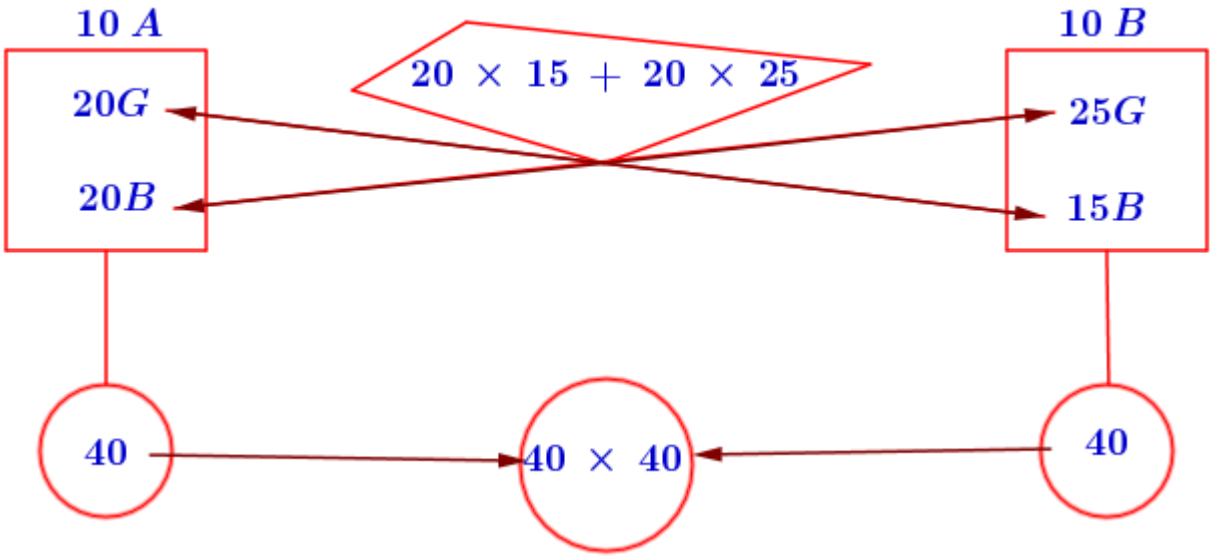
c) *Number of favourable outcomes* = 20 x 15 + 20 x 25 + 20 x 15

= 300 + 500 + 300 = 11

Probability of atleast one boy = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$ = $\frac{1100}{1600}$ = $\frac{11}{16}$

NB :





(2) *Each two digit number is written on a paper slip and these are all put in a box .What is the probability that the product of the digits of a number drawn is a prime number ? What if three digit numbers are used instead ?*

Answer

Total number of outcomes = 90

(Total number of two digit numbers)

Two digit numbers in which product of the digits is prime = 12 , 21 , 13 , 31 , 15 , 51 , 17 , 71

Number of favourable outcomes = 8

Probability that the product of the digits of a two digit number drawn is a prime number = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$

$= \frac{8}{90} = \frac{2}{45}$

Total number of outcomes = 900

(Total number of three digit numbers)

Three digit numbers in which product of the digits is prime = 112 , 121 , 211 ,

113 , 131 , 311 ,

115 , 151 , 511 ,

117 , 171 , 711

Number of favourable outcomes = 12

Probability that the product of the digits of a two digit number drawn is a prime number = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$

$= \frac{12}{900} = \frac{1}{75}$

(3) *One is asked to say a two digit number*

(i) *What is the probability of both digits being same* ?

(ii) *What is the probability of the first digit being larger* ?

(iii) *What is the probability of the first digit being smaller* ?

Answer

Total number of outcomes = 90

(*Total number of two digit numbers*)

i) *Two digit numbers in which digits are same* = 11 , 22 , 33 ,44 , 55 , 66 , 77 , 88 , 99

Number of favourable outcomes = 9

Probability of both digits being same = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{9}{90} = \frac{1}{10}$

ii) *Two digit numbers in which the first digit being larger* = 10 , 20 , 21 , 30 , 31 , 32 , 40 ,

41 , 42 , 43 , 50 , 51 , 52 , 53 , 54 , 60 , 61 , 62 , 63 , 64 , 65 , 70 , 71 , 72 , 73 , 74 ,

75 , 76 , 80 , 81 , 82 , 83 , 84 , 85 , 86 , 87 , 90 , 91 , 92 , 93 , 94 , 95 , 96 , 97 , 98

Number of favourable outcomes = 45

Probability of the first digit being larger = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$

$= \frac{45}{90} = \frac{1}{2}$

Two digit numbers in which the first digit being smaller = 12 , 13, 14 , 15 , 16 ,17 , 18 , 19 ,

23 , 24 , 25 , 26 , 27 , 28 , 29 , 34 , 35 , 36 , 37 , 38 , 39 , 45 ,46 , 47 , 48

49 , 56 , 57 , 58 , 59 , 67 , 68 , 69 , 78 , 79 , 89

Number of favourable outcomes = 36

Probability of the first digit being smaller = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$.

$$= \frac{36}{90} = \frac{2}{5}$$

(4) *Two dice with faces numbered from* 1 *to* 6 *are rolled together .What are the possible sums ?*

Which of these sums has the maximum probability ?

Answer .

Total outcomes =

$$(1,1)\ ,\ (1,2)\ ,\ (1,3)\ ,\ (1,4)\ ,\ (1,5)\ ,\ (1,6)$$

$$(2,1)\ ,\ (2,2)\ ,\ (2,3)\ ,\ (2,4)\ ,\ (2,5)\ ,\ (2,6)$$

$$(3,1)\ ,\ (3,2)\ ,\ (3,3)\ ,\ (3,4)\ ,\ (3,5)\ ,\ (3,6)$$

$$(4,1)\ ,\ (4,2)\ ,\ (4,3)\ ,\ (4,4)\ ,\ (4,5)\ ,\ (4,6)$$

$$(5,1)\ ,\ (5,2)\ ,\ (5,3)\ ,\ (5,4)\ ,\ (5,5)\ ,\ (5,6)$$

$$(6,1)\ ,\ (6,2)\ ,\ (6,3)\ ,\ (6,4)\ ,\ (6,5)\ ,\ (6,6)$$

Total number of outcomes = 6 x 6 = 36

Possible sums = 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10 , 11 , 12

Sum	*Pairs*	*Number of pairs*
2	(1,1)	1
3	(1,2) ,(2,1)	2
4	(1,3) ,(2,2),(3,1)	3
5	(1,4) ,(2,3), (3,2),(4,1)	4
6	(1,5) ,(2,4),(3,3),(4,2),(5,1)	5
7	(1,6) ,(2,5),(3,4),(4,3),(5,2),(6,1)	6
8	(2,6) ,(3,5),(4,4),(5,3),(6,2)	5
9	(3,6) ,(4,5), (5,4),(6,3)	4
10	(4,6) ,(5,5),(6,4)	3
11	(6,5) ,(5,6)	2
12	(6,6)	1

Sum " 7 " occurs more . So it has the maximum probability

Probability of getting sum " 7 " = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$ = $\frac{6}{36}$ = $\frac{1}{6}$

ONLINE MATHS CLASS - X – 40 (06 / 10 /2020)

WORK SHEET

(1) *One is asked to say a two digit number .*

a) *How many two digit numbers are there* ?

b) *What is the probability of getting a multiple of* 5 ?

c) *What is the probability of getting a multiple of* 10 ?

d) *What is the probability of one of the digit is zero and the other is a prime number* ?

(2) *In a basket there are* 30 *apples and* 20 *oranges .There are* 25 *apples and 35 oranges in another basket . A fruit is to be chosen from each basket*

a) *If each fruit from the first basket paired with a fruit from the second basket , how many possible pairs are there* ?

b) *What is the probability of both being oranges ?*

c) *What is the probability of one apple and one orange ?*

d) *What is the probability of at least one orange ?*

(3) *Two dice with faces numbered from* 1 *to* 6 *are rolled together .*

a) *How many possible pairs of numbers will be got* ?

b) *What is the probability of both being even* ?

c) *What is the probability of both being odd* ?

d) *What is the probability of sum of the digits being even* ?

(4) *Consider a leap year .*

a) *How many days are there in a leap year ?*

b) *What is the probability of occurring* 53 *saturdays in a leap year?*

c) *What is the probability of occurring* 53 *saturdays in a non-leap year ?*

(5) a) *How many days are there in the month January ?*

b) *What is the probability of occurring* 5 *sundays in January ?*

c) *What is the probability of occurring* 5 *sundays in February of a leap year ?*

ONLINE MATHS CLASS - X - 37 (29 / 09 /2020)

WORKSHEET

1. *One is asked to say a letter in the English alphabet .*

a) *How many letters are there in English alphabet ?*

b) *What is the probability of telling a vowel ?*

c) *What is the probability of telling a consonant ?*

d) *What is the sum of the probabilities of telling a vowel and not telling a vowel ?*

2. *One is asked to say a two digit number .*

a) *How many two digit numbers are there ?*

b) *What is the probability of getting a number in which one of the digits is* 1 ?

c) *What is the probability of getting a number in which the product of the digits is a prime number ?*

3. *There are* 10 *red and* 7 *blue balls in a basket . A ball is taken from it*

a) *What is the probability of getting a red ball ?*

b) *What is the probability of getting a blue ball ?*

c) *What is the sum of the probabilities of getting a red ball and not getting a red ball ?*

d) *If three more blue balls are added to the basket and one ball is taken , what is the probability of getting a red ball ?*

4. *One is asked to say a three digit number .*

a) *How many three digit numbers are there ?*

b) *What is the probability of getting a number whose digits are same ?*

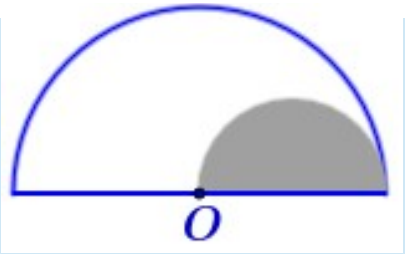
c) *What is the probability of getting a number in which all digits are different ?*

SSAARRAATTHH ..AA..SS .,

HHSSTT..GGHHSS AANNCCHHAACCHHAAVVAADDII

ONLINE MATHS CLASS - X - 38 (01 / 10 /2020)

WORK SHEET

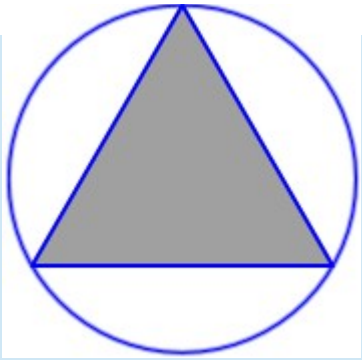


1. *There are two semicircles in the figure . O is the centre of the larger semicircle . Put a dot in this figure without looking .*

a) *If the radius of the smaller semi circle is* r *, What is the radius of the larger semicircle ?*

b) *What is the probability that the dot would be within the smaller semicircle ?*

c) *What is the probability that the dot would be outside the smaller semicircle ?*

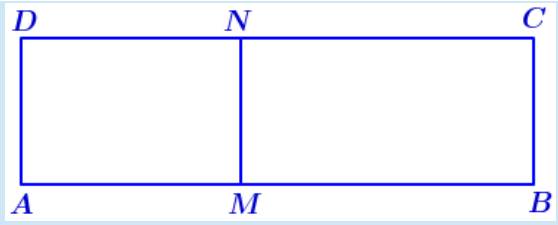


2. *In the figure , an equilateral triangle is drawn inside a circle . Put a dot in this figure without looking .*

a) *If the radius of the circle is* r *, What is the length of the side of the triangle ?*

b) *What is the probability that the dot would be within the triangle ?*

c) *What is the probability that the dot would be outside the triangle ?*



3 . *Two rectangles are joined in the figure . If we put a dot in the figure without looking , the probability of it would be within the rectangle AMND is* $\frac{4}{9}$

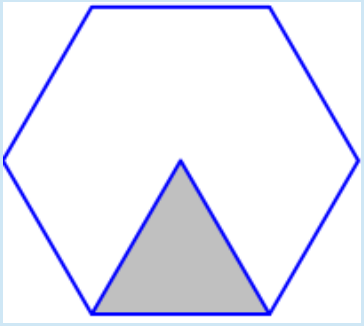
a) *What is the probability that the dot would be within the rectangle MBCN ?*

b) If *AM* = 8 *cm* and *MN* = 5 *cm* , *what is the area of the rectangle ABCD ?*

c) *If the area of the rectangle AMND is* y *and the probability of the dot would be within this rectangle is* $\frac{y}{x}$ *, what is the area of the rectangle MBCN ?*

SARATH .A .S , HST ,GHS ANCHACHAVADI

4. *In the figure , an equilateral triangle is drawn inside a regular hexagon . Put a dot in this figure without looking .*

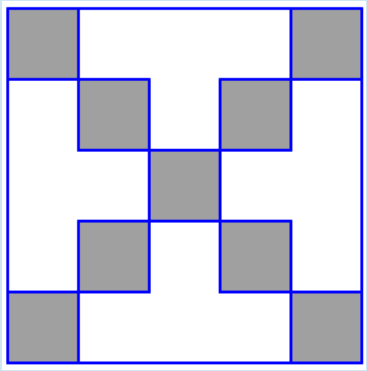


a) *What is the maximum number of triangles of the given size can be cut from the hexagon ?*

b) *What is the probability that the dot would be within the triangle ?*

c) *What is the probability that the dot would be outside the triangle ?*

5 . *In the figure , small equal squares are drawn inside a square . Put a dot in this figure without looking .*



a) *What is the maximum number of small squares of the given size can be cut from the larger square ?*

b) *What is the probability that the dot would be within the shaded portion ?*

c) *What is the probability that the dot would be outside the shaded portion ?*

ONLINE MATHS CLASS - X - 39 (05 / 10 /2020)

WORK SHEET

(1) *There are two boxes contain some slips numbered from* 1 *.One slip is taken from each .*

The numbers on the slips in each box is given in the table below .Complete the table.

Box 1	*Box 2*	*Possible pairs*	*Number of pairs*	*Product of the number of slips in each box*
1 , 2	1	(1 , 1) , (2 , 1)	2	2 x 1 = 2
1 , 2	1 , 2	(1 , 1) , (1 , 2) (2 , 1) , (2 , 2)	4	2 x 2 = 4
1 , 2 , 3	1 , 2	(1 , 1) , (1 , 2) (2 , 1) , (2 , 2) (3 , 1) , (3 , 2)	6	3 x 2 = 6
1 , 2 , 3	1 , 2 , 3	----------	----------	----------
1 , 2 , 3 , 4	1 , 2	----------	----------	----------
1 , 2 , 3 , 4 , 5	1 , 2 , 3	----------	----------	----------
1 , 2 , 3 , 4 , 5 , 6	1 , 2 , 3 , 4	----------	----------	----------

(3) *A box contains five slips numbered* 1 , 2 , 3 , 4 , 5 *and another box contains three slips* 1 , 2 , 3 *One slip is taken from each*

a) *What are the possible pairs* ?

b) *What is the probability of both the numbers being odd* ?

c) *What is the probability of both the numbers being even* ?

d) *What is the probability of the sum of the digits being even* ?

ONLINE MATHS CLASS - X – 40 (06 / 10 /2020)

WORK SHEET

(1) *One is asked to say a two digit number .*

a) *How many two digit numbers are there* ?

b) *What is the probability of getting a multiple of* 5 ?

c) *What is the probability of getting a multiple of* 10 ?

d) *What is the probability of one of the digit being zero and the other being a prime number* ?

(2) *In a basket there are* 30 *apples and* 20 *oranges .There are* 25 *apples and 35 oranges in another basket . A fruit is to be chosen from each basket*

a) *If each fruit from the first basket paired with a fruit from the second basket , how many possible pairs are there* ?

b) *What is the probability of both being oranges ?*

c) *What is the probability of one apple and one orange ?*

d) *What is the probability of at least one orange ?*

(3) *Two dice with faces numbered from* 1 *to* 6 *are rolled together .*

a) *How many possible pairs of numbers will be got* ?

b) *What is the probability of both being even* ?

c) *What is the probability of both being odd* ?

d) *What is the probability of sum of the digits being even* ?

SARATH .A .S , HST ,GHS ANCHACHAVADI

(4) *Consider a leap year .*

a) *How many days are there in a leap year ?*

b) *What is the probability of occurring* 53 *saturdays in a leap year?*

c) *What is the probability of occurring* 53 *saturdays in a non-leap year ?*

(5) a) *How many days are there in the month January ?*

b) *What is the probability of occurring* 5 *sundays in January ?*

c) *What is the probability of occurring* 5 *sundays in February of a leap year ?*