

St. Crispin's Sr. Sec. School
Holiday Homework (2020-21)

Class -X

Mathematics

- Is it true to say the pair of equations $5x-4y+7=0$ and $7x+6y-3=0$ has a unique solution? Justify
- Find the discriminant of $x^2+7x+10$ and write the nature of roots
- Find a quadratic polynomial whose sum of zeroes is $\frac{1}{4}$ and product of zeroes is -1
- Find the value of k for which the equation $2x^2+kx+3=0$ have equal roots
- Find all the zeroes of $2x^4-3x^3-3x+6x-2$,if you know that two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$
- Solve the pair of equations $\frac{2}{x} + \frac{3}{y} = 13$ and $\frac{5}{x} - \frac{4}{y} = -2$
- A fraction become $\frac{1}{3}$ when 1 is subtracted from the numerator and it become $\frac{1}{4}$ when 8 is added to its denominator . Find the fraction.
- Find the value of 'a' so that the point(3,9) lies on the line represented by $2x-3y=5$
- Find the value of k so that the lines $2x - 3y = 9$ and $kx-9y = 18$ will be parallel.
- Find the value of k for which $x + 2y = 5$, $3x+ky+15=0$ is inconsistent
- Median and mode of distribution are 20.5 and 22.4 respectively .find its median

(i)20.2 (ii) 19.1 (iii) 12 (iv)15

12. The mean of the following data is 12 then find the value of p

X	4	8	P	16	20
F	5	3	12	5	4

12. Find the median of the following distribution

Classes	0-10	10-20	20-30	30-40	40-50
Frequency	6	10	12	8	8

13. Draw "less than type ogive "and the "more than type ogive" for the following distribution and hence find its median

Classes	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	10	8	12	20	18	17	15

- The probability of getting bad egg in a lot of 400 is 0.035.Then find the no. of bad eggs in the lot.
- Write the probability of a sure event.
- What is the probability of an impossible event.
- When a dice is thrown, then find the probability of getting an odd number less than 3.
- A girl calculates that the probability of her winning the third prize in a lottery is 0.08.If 6000 tickets are sold, how many ticket has she brought.
- What is probability that a non-leap year selected at random will contain 53 Sundays.
- A bag contains 40 balls out of which some are red, some are blue and remaining are black. If the probability of drawing a red ball is 0.4 and that of black ball is 0.3 , then what is the no. of black ball.
- Two coins are tossed simultaneously. Find the probability of getting exactly one head.
- A card is drawn from a well suffled deck of 52 cards. Find the probability of getting an ace.
- In a lottery, there are 10 prizes and 25 blanks. Find the probability of getting a prize.
- Find the probability that a no. selected at random from the number 3,4,5,6,.....25 is prime.
- A bag contains 5 red,4 blue and 3 green balls. A ball is taken out of the bag at random. Find the probability that the selected ball is (a) of red colour (b) not of green colour.
- A card is drawn at random from a well-shuffled deck of playing cards. Find the probability of drawing (a) A face card (b)card which is neither a king nor a red card
- A dice is thrown once. What is the probability of getting a number greater than 4?

28. Two dice are thrown at the same time. Find the probability that the sum of two numbers appearing on the top of the dice is more than 9.
29. Two dice are thrown at the same time. Find the probability of getting different numbers on both dice.
30. Find the fraction which becomes to $\frac{2}{3}$ when the numerator is increased by 2 and equal to $\frac{4}{7}$
31. when the denominator is increased by 4
32. Solve the equation:
 $px + qy = p - q$
 $qx - py = p + q$
33. A man has only 20 paise coins and 25 paise coins in his purse, If he has 50 coins in all totaling Rs. 11.25, how many coins of each kind does he have.
34. Draw the graphs of the equations
 $4x - y = 4$
 $4x + y = 12$
 Determine the vertices of the triangle formed by the lines representing these equations and the x axis. Shade the triangular region so formed
35. 8 men and 12 boys can finish a piece of work in 10 days while 6 men and 8 boys can finish it in 14 days. Find the time taken by 1 man alone and that by one boy alone to finish the work
36. A man travels 370 km partly by train and partly by car. If he covers 250 km by train and the rest by the car it takes him 4 hours, but if he travels 130 km by train and the rest by car, he takes 18 minutes longer. Find the speed of the train and that of the car
37. Students of a class are made to stand in rows. If one student is extra in a row, there would be 2 rows less. If one student is less in a row there would be 3 rows more. Find the number of the students in the class.
38. If α and β are the zeroes of the equation $6x^2+x-2$ find the value of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$
39. Check whether $3x-2$ is a factor of $3x^3+x^2-20x+12$

PROJECT: Each student is to make a Powerpoint Presentation (Min.10 slides) on any one of the following topic

1. History of π
2. Indian Mathematician
3. Use of Mathematics in daily life
4. FIBONACCI NUMBERS
5. Exploring Pascal's triangle

ACTIVITIES:

1. To get familiar with the idea of probability of an event through a double colour card experiment
2. To collect the data regarding heights of the students of class X, find its mean, median and mode.
3. To obtain the condition for consistency of the system of linear equation in two variables by graphical method.

NOTE : Do all these questions in register and all the activities in lab manual file.