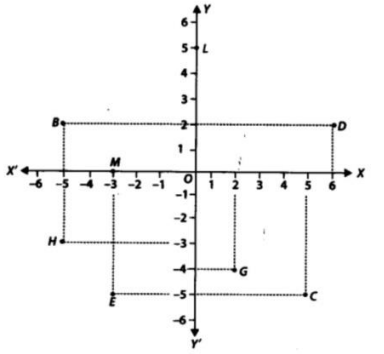
HOLIDAYS HOME WORK (40 QUESTION)

IX MATHS : KV NAHARA

S.N.	QUESTIONS
1	Are the following statements true or false? Give reasons for your answers. (i) Every whole number is a natural number. (ii) Every integer is a rational number. (iii) Every rational number is an integer
2	Find six rational numbers between 3 and 4.
3	Show how $\sqrt{5}$ can be represented on the number line
4	State whether the following statements are true or false. Justify your answers. (i) Every irrational number is a real number. (ii) Every point on the number line is of the form m , where m is a natural number. (iii) Every real number is an irrational number
5	Show that 1.272727... = 1. $\overline{27}$. can be expressed in the form p/ q , where p and q are integers and q ≠ 0.
6	Express the following in the form p/q , where p and q are integers and q ≠ 0. (i) $0.\overline{6}$. (ii) 0. $\overline{47}$. (iii) $0.\overline{001}$
7	Find three different irrational numbers between the rational numbers $\frac{5}{7}$ and $\frac{9}{11}$
8	Locate $\sqrt{3}$ on the number line.
9	Find five rational numbers between 1 and 2.
10	Show that 0.3333... = $0.\overline{3}$. can be expressed in the form p/q , where p and q are integers and q ≠ 0.
11	Visualise 4 $\overline{26}$. on the number line, up to 4 decimal places.
12	Rationalise the denominator of $\frac{1}{2+\sqrt{3}}$.
13	Rationalise the denominator of $\frac{5}{\sqrt{3}-\sqrt{5}}$
14	Simplify : (i) $(64)^{\frac{1}{6}}$ (ii) $(125)^{\frac{-1}{3}}$
15	Simplify : $7^{\frac{1}{5}}$ - $7^{\frac{1}{3}}$
16	Rationalise the denominator of $\frac{1}{\sqrt{5}+\sqrt{3}}$
17	Find a zero of the polynomial p(x) = 2x + 1.
18	Find p(0), p(1) and p(2) for each of the following polynomial p(x) = (x – 1) (x + 1)
19	Find the zero of the polynomial (i) p(x) = 3x – 2 (ii) p(x) = cx + d, c ≠ 0, c, d are real numbers
20	Divide p(x) by g(x), where p(x) = x + $3x^2$ – 1 and g(x) = 1 + x.
21	Divide the polynomial $3x^4 – 4x^3 – 3x –1$ by x – 1 and verify the same.
22	Find the remainder when $x^3 – ax^2 + 6x – a$ is divided by x – a.
23	Find the value of k, if x – 1 is a factor of $4x^3 + 3x^2 – 4x + k$.

24	Factorise : $y^2 - 5y + 6$ by using the Factor Theorem.
25	Factorise : $x^3 + 13x^2 + 32x + 20$
26	
I	The coordinates of B.
Ii	The coordinates of C.
Iii	The point identified by the coordinates (–3, –5).
Iv	The point identified by the coordinates (2, – 4).
v	The abscissa of the point D.
vi	The ordinate of the point H.
vii	The coordinates of the point L.
viii	The coordinates of the point M.
27	In which quadrant or on which axis do each of the points (– 2, 4), (3, – 1), (– 1, 0), (1, 2) and (– 3, – 5) lie? Verify your answer by locating them on the Cartesian plane.
28	Find four different solutions of the equation x + 2y = 6.
29	Find the value of k, if x = 2, y = 1 is a solution of the equation 2x + 3y = k.
30	The taxi fare in a city is as follows: For the first kilometre, the fare is ` 8 and for the subsequent distance it is ` 5 per km. Taking the distance covered as x km and total fare as ` y, write a linear equation for this information, and draw its graph
31	In countries like USA and Canada, temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius: **$F = \frac{9}{5}C + 32$** (i) Draw the graph of the linear equation above using Celsius for x-axis and Fahrenheit for y-axis. (ii) If the temperature is 30°C, what is the temperature in Fahrenheit? (iii) If the temperature is 95°F, what is the temperature in Celsius? (iv) If the temperature is 0°C, what is the temperature in Fahrenheit and if the temperature is 0°F, what is the temperature in Celsius? (v) Is there a temperature which is numerically the same in both Fahrenheit and Celsius? If yes, find it.
32	Give the geometric representations of 2x + 9 = 0 as an equation (i) in one variable (ii) in two variables

33	Yamini and Fatima, two students of Class IX of a school, together contributed ` 100 towards the Prime Minister's Relief Fund to help the earthquake victims. Write a linear equation which satisfies this data. (You may take their contributions as ` x and ` y.) Draw the graph of the same.
34	Draw the graph of $x + y = 7$.
35	Locate the points (5, 0), (0, 5), (2, 5), (5, 2), (–3, 5), (–3, –5), (5, –3) and (6, 1) in the Cartesian plane.
36	Find the remainder obtained on dividing $p(x) = x^3 + 1$ by $x + 1$.
37	Write the Remainder Theorem.
38	Represent $\sqrt{9.3}$ on the number line.
39	Rationalise the denominator of $\frac{1}{7+3\sqrt{2}}$
40	Write three numbers whose decimal expansions are non-terminating non-recurring.