



HALF YEARLY (2020 - 21)

Student's Name:		Grade	IX	Roll No.	
Date:	11/09/2020 (Friday)	Time	3 hrs.	Subject	MATHS
Teacher's Sign.				Total Marks	80

General Instruction:

1. Questions from 1 to 20 are carries 1 Marks each.
2. Questions from 21 to 28 are carries 2 Marks each.
3. Question from 29 to 38 carries 3 Marks each.
4. Question from 39 to 46 carries 4 Marks each.

Section – A

[1X 20= 20]

Solve 1 to 20 questions each carry 1 mark

Q 1 Which of the following is an irrational number?

- a $\sqrt{23}$ b $\sqrt{225}$ c 0.3796 d 7.478478.....

Q 2 A rational number between -3 and 3 is

- a 0 b -4.3 c -3.4 d 1.101100110001....

Q 3 A number is an irrational if and if its decimal representation is:

- a non-terminating b non-terminating and repeating
c non-terminating and non repeating d terminating

Q 4 Find the degree of polynomial $x^3 + x^2 + 3$

- a 3 b 2 c 1 d none

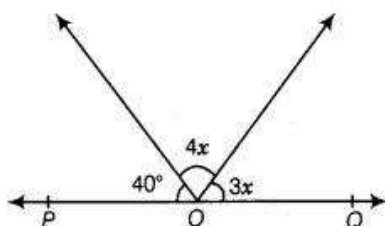
Q 5 The zero of the polynomial $P(x) = 2x + 5$ is

- a $\frac{2}{5}$ b $\frac{5}{2}$ c 0 d $-\frac{5}{2}$

Q 6 Which of the following is quadratic polynomial

- a $x + 2$ b $x^2 + 2$ c $x^3 + 2$ d $2x + 2$

Q 7 In the figure, POQ is a line. The value of x is.



a. 20°

b. 25°

c. 30°

d. 35°

Q 8. The exterior angle of a triangle is equal to the sum of two

a. Exterior angle

b. Interior angle

c. Interior opposite angle

d. None

Q 9 Complementary angle of 50° is

a. 40°

b. 95°

c. 130°

d. None

Q 10 Measure of angle an angle which is supplement to itself is

a. 30°

b. 45°

c. 90°

d. none

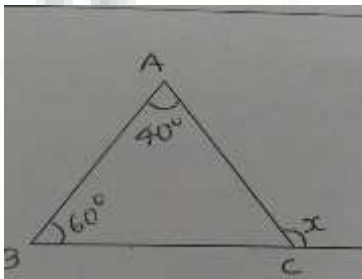
Q 11 Find: $125^{\frac{1}{3}}$

Q 12 Evaluate: 103×107

Q 13 Write the name of the point where X and Y axis intersect to each other?

Q 14 Write linear equation in two variable in standard form: $x = 3y$

Q 15. Find x in the figure



Q 16 In $\triangle ABC$, if $BC = AB$ and $\angle B = 80^\circ$, find angle $\angle A$

Q 17 If the ratio between two complementary angles are 2:3, then find the angle

Q 18 If $(2, -2)$ is a solution of the linear equation $2x + 3y = k$, then the value of k is

Q 19 A coin is tossed 100 times and head appears 46 times. Now, if we toss a coin at random, then what is the

Probability of getting a tail ?

Q 20 In a cricket match, if a batsman hits a boundary 8 times out of 40 balls he plays. Then, the probability that he didn't hit a boundary ?

Section – B

[2X6=12]

Solve any 6 question each carry 2 marks

Q 21 the coins are tossed simultaneously 500 times, and we get

Two heads

one heads

no heads

105

275

120

Find the probability of occurrence of each of these events.

Q 22 Express 0.33333..... in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

Q 23. Factorise: $2x^2 + 7x + 3$

Q 24 A coin is tossed 200 times and is found that a tail comes up for 120 times find the probability of getting a tail.

Q 25 Classify the following as linear, quadratic and cubic polynomials:

- (a) $x^2 + x$ (b) $x^3 - x$ (c) $1 + x$ (d) $3x$

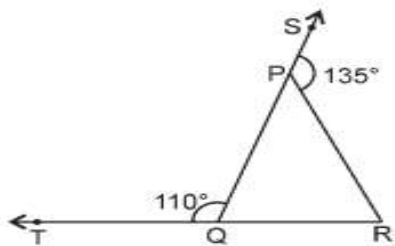
Q 26. Write the answer of each of the following questions:

(i) What is the name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?

(ii) What is the name of each part of the plane formed by these two lines ?

Q 27. Write four solutions for $2x + y = 7$

Q 28 Sides QP and RQ of triangle PQR are produced to point S and T respectively if angle $SPR = 135^\circ$ and angle $PQT = 110^\circ$ find angle PRQ

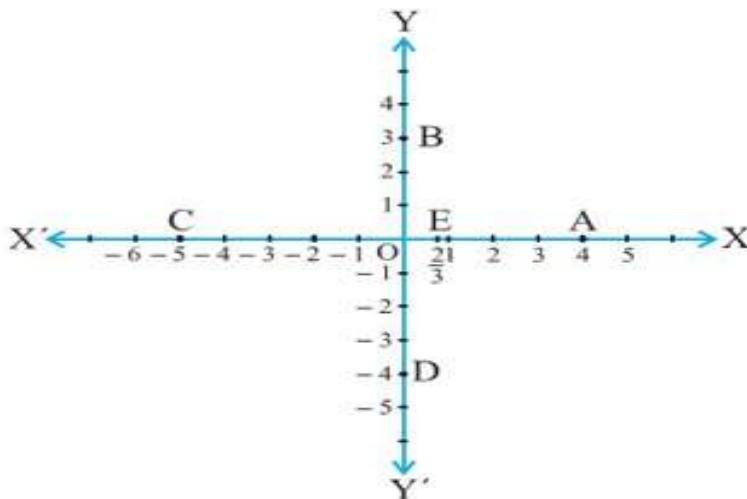


Section – C

[3X8=24]

Solve any 8 questions each carry 3 marks

Q 29 Write the coordinates of the points marked on the axes in given figure



Q 30 Evaluate 103×107

Q 31 Express 3.142678 in the form $\frac{p}{q}$

Q 32 Find the value of the polynomial $5x - 4x^2 + 3$ at

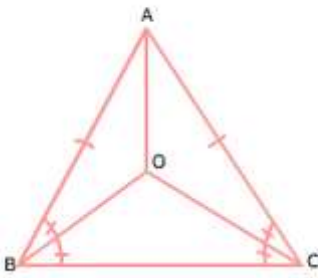
(i) $x = 0$

(ii) $x = -1$

(iii) $x = 2$

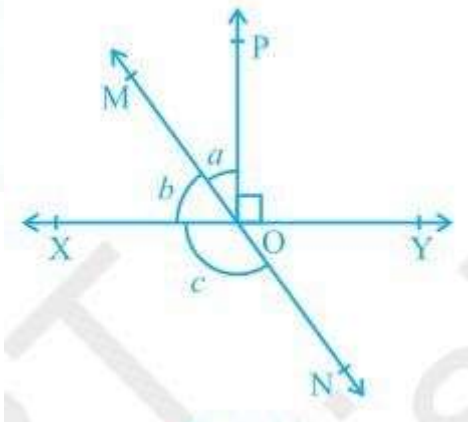
Q 33 prove that, the sum of the angles of a triangle is 180°

Q 34 In an isosceles triangle ABC, with $AB = AC$, the bisectors of $\angle B$ and $\angle C$ intersect each other at O. join A to O, Show that (i) $OB = OC$ (2) AO bisect $\angle A$



Q 35 If two lines intersect each other, then the vertically opposite angles are equal.

Q 36 In fig ray lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a:b = 2:3$, find c



Q 37 The record of a weather station shows that out of the past 250 consecutive days its weather forecast were correct 175 times.

(i) What is the probability that on a given day it was correct?

(ii) What is the probability that on a given day it was not correct?

Q 38 Factorise; (i) $12x^2 - 7x + 1$

(ii) $2x^2 + 7x + 3$.

Section – D

(4 X 6 = 24)

Solves any 6 question each carry 4 marks

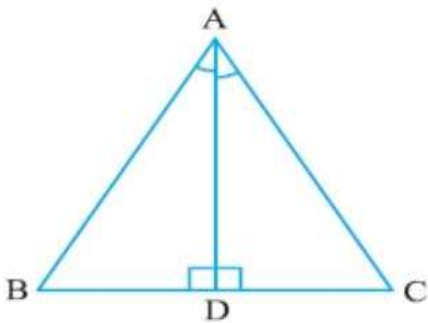
Q 39 Simplify: (i) $(\sqrt{3} + \sqrt{7})^2$

(ii) $(5 + \sqrt{7})(2 + \sqrt{5})$

Q 40. Find the value of K, if $x-1$ is a factor of $P(x)$: (i) $x^2 + x + k$ (ii) $kx^2 - 3x + k$

Q 41. Draw the graph of $x + y = 7$

Q 42 In triangle ABC. The bisector AD of $\angle A$ is perpendicular to side BC. Show that $AB = AC$ and triangle ABC is isosceles.

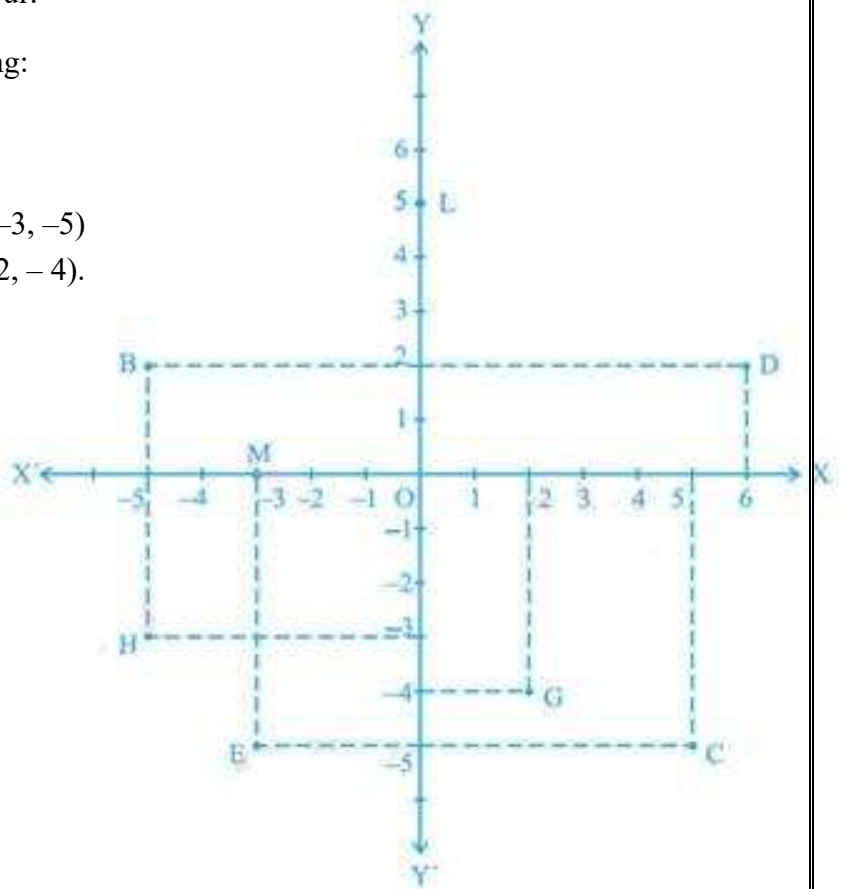


Q 43 Angles opposite to equal sides of an iso-scales triangle are equal.

Q 44 Eleven bags of wheat flour, each marked 5 kg, actually contained the following weights of flour (in kg) 4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00 find the probability that any of these bags chosen at random contains more than 5 kg of flour.

Q 45 See in below figure, and write the following:

- (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.



Q 46 If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, express this in the form of an equation in two variables and draw the graph of the same

by taking the constant force as 5 units. Also read from the graph the work done when the distance travelled by the body is: (i) 2 units (ii) 0 units



