

Class – IX
Periodic Test-I
(2022-2023)
Mathematics



Date : 18.07.2022
Time : 1hr 30 mins

Roll No :
M.M. : 40

General Instructions:

- a) This question paper contains two Parts I and II.
- b) **PART-I**
It consists two sections –A and B.
Section A has 5 questions of 1 mark each.
Section B has 5 questions of 2 marks each.
- c) **PART-II**
It consists two sections –C and D.
Section C has 3 questions of 3 marks each.
Section D has 3 questions of 4 marks each.
- d) Question No. 17 is case study based question. It consists of 5 sub-parts. Attempt any four.

PART-I
SECTION-A

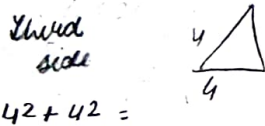
1. Write the quadrants in which the points $(-5, 2)$ and $(2, -5)$ will lie?
2. Define collinear points . *collinear same line*
3. Write the point which meets the graph(line) of linear equation $2x+ 3y = 6$ at X- axis.

4. Write the point which lies on Y-axis at a distance of 5 units in the negative direction of Y-axis.
5. Write the equation $x = 7$, in two variables .

SECTION-B

6. The sides of a triangle are 35 cm, 54 cm and 61 cm, respectively. Find the area of triangle.
7. How many solution(s) of the equation $2x + 1 = x - 3$ are there on the
 - a) Number Line /
 - b) Cartesian Plane? *Infinite*
8. Which of the following points lie on Y-axis?
 $A(1, 1)$, $B(1, 0)$, $C(0, 1)$, $D(0, 0)$, $E(0, -1)$, $F(-1, 0)$, $G(0, 5)$, $H(-7, 0)$ and $I(3, 3)$.
9. If $(2, 0)$ is a solution of the linear equation $2x + 3y = k$, then find the value of k .
10. An isosceles right triangle has area 8 cm^2 . Then find the length of its hypotenuse .

PART-II SECTION-C



$2(2) + 5(4) = 19$
 $4 + 5 \times \frac{4 \times 1}{2} = 19$
 $2(0) + 5y = 19$

11. Plot the following points on the graph and write the name of the figure obtained by joining them in order. Find its area also.

$P(-3, 2)$, $Q(-7, -3)$, $R(6, -3)$, $S(2, 2)$

$2(2) + 5(4) = 19$
 $4 + 5(4) = 19$

12. Determine the point on the graph of the linear equation $2x + 5y = 19$ whose ordinate is $1\frac{1}{2}$ times its abscissa.
13. The perimeter of an isosceles triangle is 32 cm. The ratio of the equal side to its base is $3 : 2$. Find the area of the triangle.

$2x + 5y = 19$
 $2(x) + 5(2) = 19$
 $2x + 10 = 19$

$2 \times 2 \times \frac{1}{2}$

$2x + 10 = 19$
 $2x = 9$
 $x = \frac{9}{2}$

SECTION-D

14. A rhombus shaped sheet with perimeter 40 cm and one diagonal 12 cm, is painted on both sides at the rate of ₹5 per cm^2 . Find the cost of painting.
15. The force exerted to pull a cart is directly proportional to the acceleration produced in the body. Express the statement as a linear equation of two variables and draw the graph of the same by taking the constant mass equal to 6 kg. Read from the graph, the force required when the acceleration produced is
 a) 5 ms^{-2} b) 6 ms^{-2}
16. Write the coordinates of the vertices of a rectangle whose length and breadth are 5 and 3 units respectively, one vertex at the origin, the longer side lies on the X-axis and one of the vertices lies in the third quadrant. Also find the area of the rectangle.
17. **Case Study:**
 If the temperature of a liquid can be measured in Kelvin units as $x^\circ\text{K}$ or in Fahrenheit units as $y^\circ\text{F}$, the relation between the two systems of measurement of temperature is given by the linear equation

$$y = \frac{9}{5}(x - 273) + 32$$

$p = 40$
 $s = 10 \text{ cm}$
 $A = \frac{1}{2} \times 10 \times 8 = 40 \text{ cm}^2$
 200

$$A = \frac{1}{2} \times 12 \times 12$$

$$\frac{1}{2} \times 10 \times 12$$

$$= 12^2 + 10^2 = 144 + 100$$



$$\frac{9 \times 10}{5} = 18$$

$$12^2 = 10^2 + p^2$$

$$144 - 100 = p^2$$

- a) Find the temperature of the liquid in Fahrenheit, if the temperature of the liquid is 313K.
- b) If the temperature is 158°F , then find the temperature in Kelvin.
- c) If the temperature is 0K, what is the temperature in Fahrenheit and if the temperature is 0°F , what is the temperature in Kelvin?
- d) What is the numerical value of the temperature which is same in both the scales?
- e) Write the given equation in the form of $ax + by + c = 0$ and find the values of a, b and c.