

## Periodic Test – 3 Worksheet

Class – X

Mathematics

1	Find the centroid of the triangle formed by the lines $x=0, y=0$ and $x+y=9$ .
2	If sum and product of two numbers are 34 and 128 respectively. Find the numbers.
3	What is the ordinate of a point on x axis and what is the abscissa of a point on y- axis ?
4	Find the nature of roots of the quadratic equation $3x^2 + 2x + 5 = 0$
5	An electric cable costs Rs. 200. If the cable was 5 metres longer and each metre of cable cost RS. 2 less, the cost of the cable would have remained unchanged. Find the length of the cable.
6	Find the positive value of k for which $x^2 - kx + 64 = 0$ and $x^2 - 8x + k = 0$ will have real roots.
7	Solve the equation $(x-1)(x+2) + 2 = 0$ by the method of completing the square.
8	Show that the points A(5, -1), B(8, 3), C(4, 0) and D(1, -4) are the vertices of a rhombus.
9	Solve $abx^2 + (b^2 - ac)x - bc = 0$ using quadratic formula.
10	If the points A(2, -2) and B(x, 7) lie on a circle with the centre O (2, 3), find the value(s) of x.
11	Find the value of p for which the quadratic equation $(2p + 1)x^2 - (7p + 2)x + (7p - 3) = 0$ has equal roots. Also find these roots.
12	If A(-2, -1), B(x, 0), C(4, y) and D(1, 2) are the vertices of a parallelogram, taken in order, find x and y. Also, find the area of the parallelogram ABCD.
13	Find the ratio in which y-axis divides the line segment joining the points A(5, -6) and B(-1,-4). Also find the coordinates of the point of division.
14	If the vertices of a triangle are A(2, 4), B(5, k) and C(3, 10) and its area is 15 sq. units, then find the value(s) of k.
15	The numerator of a fraction is 3 less than its denominator. If 2 is added to both the numerator and the denominator, then the sum of the new fraction and the original fraction is $\frac{29}{20}$ . Find the original fraction.
16	A two digit number is such that the product of its digits is 18. When 63 is subtracted from the number, the digits interchange their places. Find the number.
17	If the distance of P(x, y) from the points A(3, 6) and B(-3, 4) are equal, prove that $3x + y = 5$
18	Draw a circle of radius 3.5 cm. From a point P at a distance of 8cm from the centre of the circle draw tangents to the circle. Measure the length of each tangent and verify it by actual calculation also justify your construction.
19	Construct a triangle ABC with sides BC = 7 cm, $\angle B = 60^\circ$ and AB = 6 cm. Construct another triangle similar to $\triangle ABC$ whose sides are $\frac{3}{4}$ times of the corresponding sides of $\triangle ABC$ .
20	Draw a line segment AB of length 10.5 cm. Locate a point P on AB such that AP : AB = 3 : 7. Write steps and measure each part.