Latex Assignment11

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Ex 11.10.1

1. Draw a quadrilateral in the Cartesian plane, whose vertices are $(-4, 5), (0, 7), (5, -5)$ and $(-4, -2)$. Also, find its area.
2. The base of an equilateral triangle with side $2a$ lies along the y-axis such that the mid-point of the base is at the origin. Find vertices of the triangle.
3. Find the distance between $P(x_1, y_1)$, $Q(x_2, y_2)$ when:
   (i) PQ is parallel to the y-axis.
   (ii) PQ is parellel to the x-axis.
4. Find the point x-axis, which is equidistant from the points $(7, 6)$ and $(3, 4)$.
5. Find the slope of a line, which passes through the origin, and the mid-point of the line segment joining the points $P(0, -4)$ and $B(8, 0)$.
6. Without using the Pythagoras thorem, show that the points $(4, 4), (3, 5)$ and $(-1, -1)$ are the vertices of a right angled triangle.
7. Find the slope of the line, which makes an angle of $30°$ with the positive direction of y-axis measured anticlockwise.
8. Find the value of x for which the points $(x, -1), (2, 1)$ and $(4, 5)$ are collinear.
9. Without using distance formula, show that points $(-2, -1), (4, 0), (3, 3)$ and $(-3, 2)$ are the vertices of the parallelogram.
10. Find the angle between the x-axis and the line joining the points $(3, -1)$ and $(4, -2)$.
11. The slope of a line is double of the slope of another line. If tangent of the angle between them is $\frac{!}{3}$, find the slopes of the lines.
12. A line passes through (x_1, y_1) and (h, k). If slope of the line is m, show that:
13. $k - y_1 = m(h - x_1)$

14. If three points $(h, 0), (a, b)$ and $(0, k)$ lie on a line, show that $\frac{a}{h} + \frac{b}{k} = 1$.

15. Consider the following population and year graph Fig. 1, find the slope of the line AB and using it, find what will be the population in the year 2010?

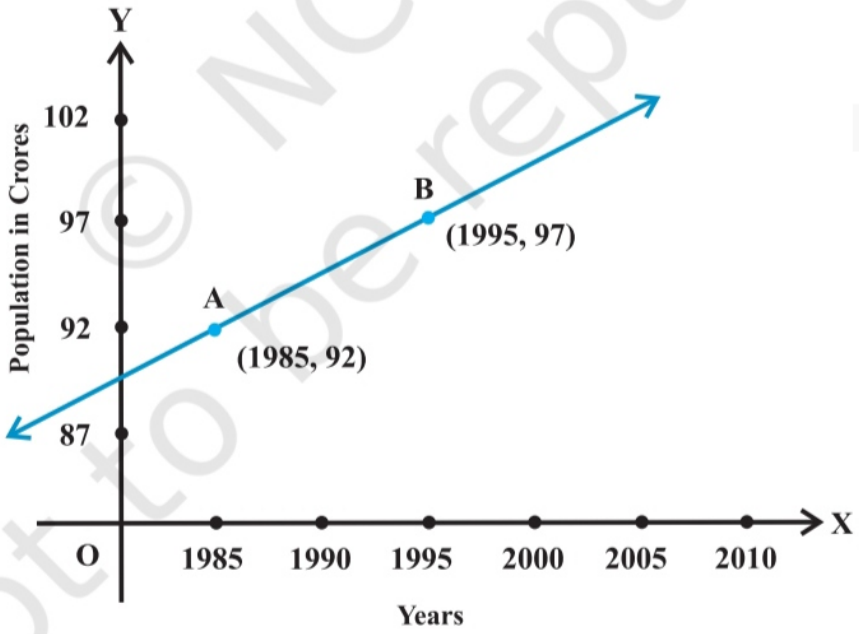

Figure 1: 10.10