Coordinate Geometry

CHAPTER 3

NCERT FOCUS

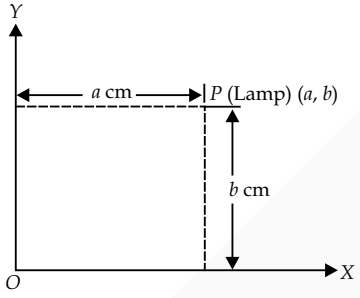
SOLUTIONS

EXERCISE - 3.1

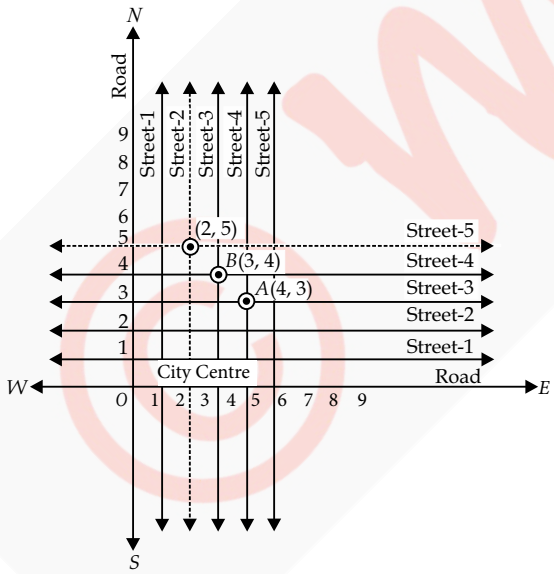
1. To describe the position of a table lamp placed on the table, let us consider the table lamp is at point P and the table as a plane.

Now choose two perpendicular edges of the table as the axes OX and OY. Measure the perpendicular distance 'a' cm of P (lamp) from OY. Measure the perpendicular distance 'b' cm of P (lamp) from OX.

Thus, the position of the table lamp P is described by (a, b).



2.



(i) A unique cross street is shown by the point $A(4, 3)$.

(ii) A unique cross street is shown by the point $B(3, 4)$.

The two cross streets are uniquely found because of the two reference lines we have used for locating them.

EXERCISE - 3.2

1. (i) The horizontal line is called x-axis and the vertical line is called y-axis.

(ii) Each part is called "Quadrant".

(iii) Origin

2. From the figure, we have

(i) The coordinates of B are $(-5, 2)$.

(ii) The coordinates of C are $(5, -5)$.

(iii) The point E is identified by the coordinates $(-3, -5)$.

(iv) The point G is identified by the coordinates $(2, -4)$.

(v) The abscissa of the point D is 6.

(vi) The ordinate of the point H is -3.

(vii) The coordinates of the point L are $(0, 5)$.

(viii) The coordinates of the point M are $(-3, 0)$.

EXERCISE - 3.3

1. In the point $(-2, 4)$, the abscissa is negative and the ordinate is positive.

$\because$ $(-, +)$ belongs to 2^{nd} quadrant.

$\therefore$ $(-2, 4)$ lies in the 2^{nd} quadrant.

The point $(3, -1)$ is having positive abscissa and negative ordinate.

$\therefore$ $(3, -1)$ lies in the 4^{th} quadrant.

The point $(-1, 0)$ is having negative abscissa and zero ordinate.

$\therefore$ The point $(-1, 0)$ lies on the negative x-axis.

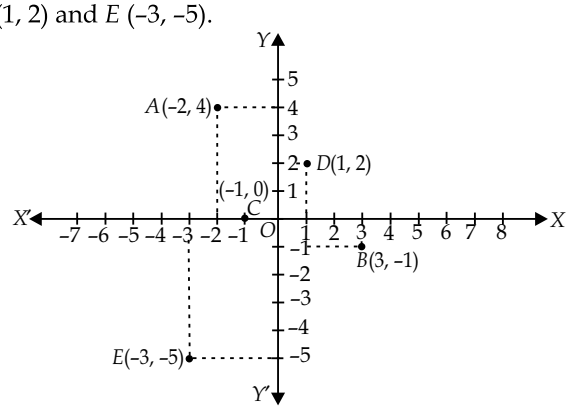
The point $(1, 2)$ is having the abscissa as well as ordinate positive.

$\therefore$ Point $(1, 2)$ lies in the 1^{st} quadrant.

The point $(-3, -5)$ is having the abscissa as well as ordinate negative.

$\therefore$ Point $(-3, -5)$ lies in the 3^{rd} quadrant.

These points are plotted in the Cartesian plane as shown in the following figure as $A(-2, 4)$; $B(3, -1)$; $C(-1, 0)$; $D(1, 2)$ and $E(-3, -5)$.



2. The given points are $(-2, 8)$, $(-1, 7)$, $(0, -1.25)$, $(1, 3)$ and $(3, -1)$. To plot these points, we draw $X'OX$ and $Y'OY$ as axes. We choose suitable scale on the axes. To

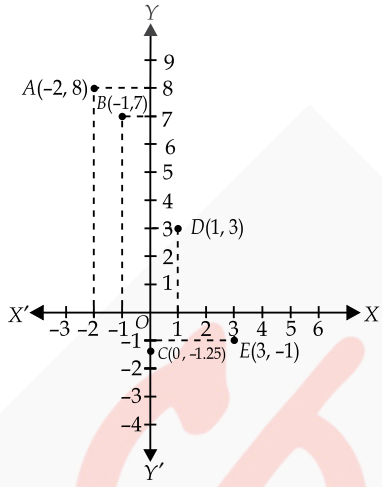
plot (–2, 8), we start from O, take 2 units on the negative x-axis and then 8 units on the positive y-axis. We mark the point as A (–2, 8).

To plot (–1, 7), we start from O, take 1 unit on the negative x-axis and then 7 units on the positive y-axis. We mark the point as B(–1, 7).

To plot (0, –1.25), we move along 1.25 units below the x-axis on the negative y-axis and mark the point as C(0, –1.25).

To plot (1, 3), we take 1 unit on the positive x-axis and then 3 units on the positive y-axis. We mark the point as D(1, 3).

To plot (3, –1), we take 3 units on the positive x-axis and then 1 unit on the negative y-axis. We mark the point as E(3, –1).



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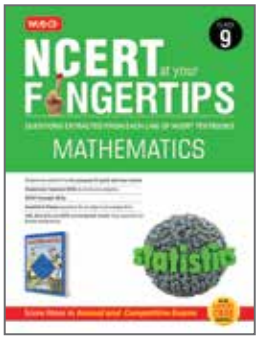

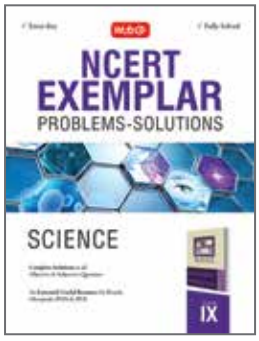

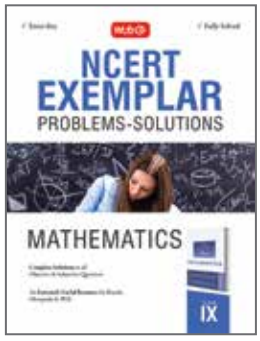

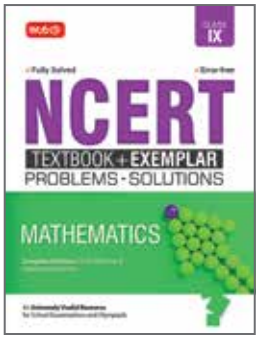

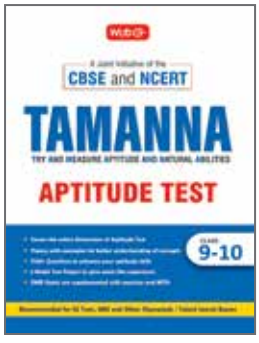

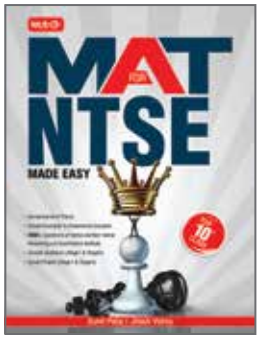

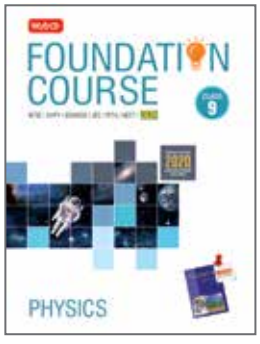

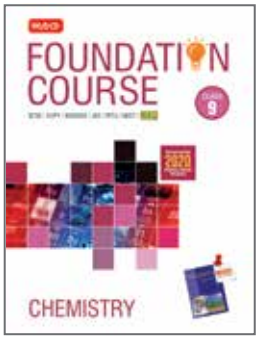

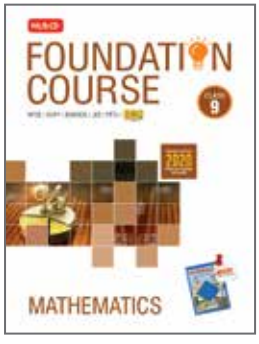

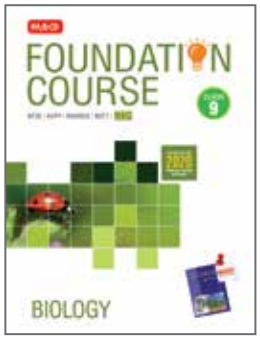

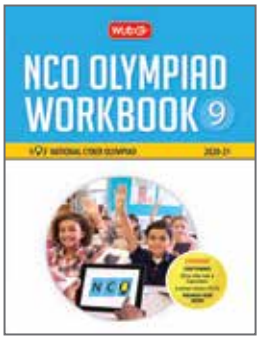

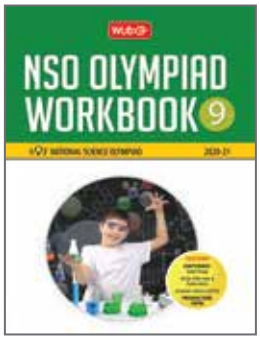

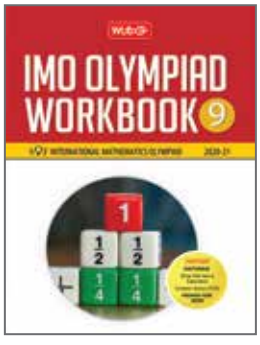

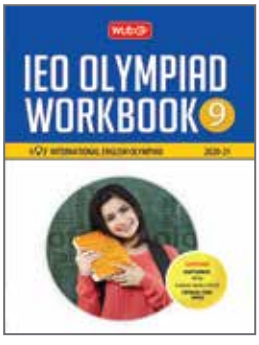

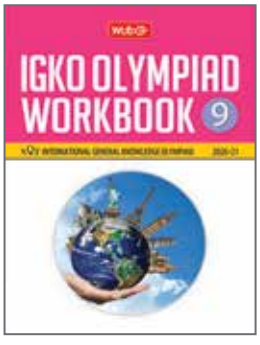

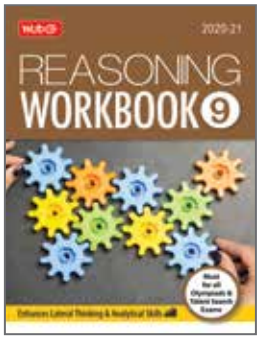

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