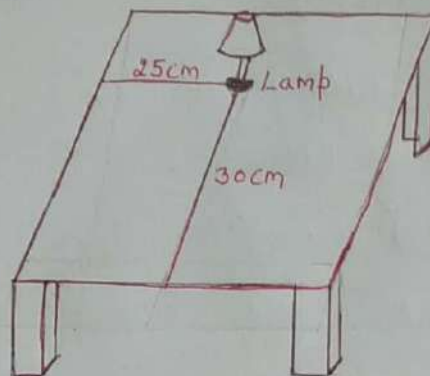


EX-3.1

①

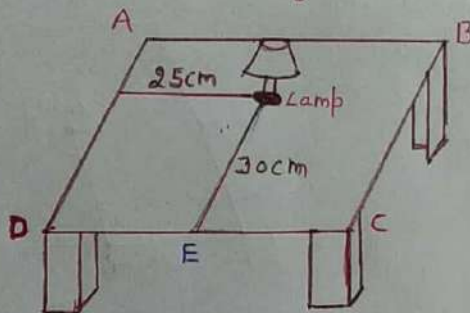
Q.1



Consider the Lamp as a point and table as a plane. Choose any two perpendicular edges of the table. Measure the distance of the Lamp from the longer edge, suppose it is 25 cm. Again, measure the distance of the lamp from the shorter edge, and suppose it is 30 cm. You can write the position of the lamp as $(30, 25)$ or $(25, 30)$, depending on the order you fix.

Important question (Final Exam March 2020) (PISA Based question)

The following figure shows a study table with a lamp. Look at the figure carefully and answer the following questions.



- (i) Consider D as an origin, which of the following describes the correct position of the lamp?
(a) $(60, 50)$, (b) $(25, 30)$ (c) $(0, 25)$ (d) $(0, 30)$
- (ii) Find the distance of the lamp from corner D?
- (iii) Assuming that position of the lamp is exactly at the centre of the table; find dimensions of the table.

Answer

(i) consider D as origin, the correct position of the lamp is (25, 30).

(ii) By using Pythagoras

$$DF^2 = DE^2 + EF^2$$

$$DF^2 = (25)^2 + (30)^2$$

$$DF^2 = 625 + 900$$

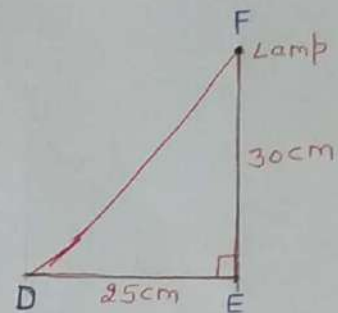
$$DF^2 = 1525$$

$$DF^2 = 1525$$

$$DF = \sqrt{1525}$$

$$DF = 39.05 \text{ (approx.)}$$

Hence, the distance of the lamp from the corner D is 39.05 cm.

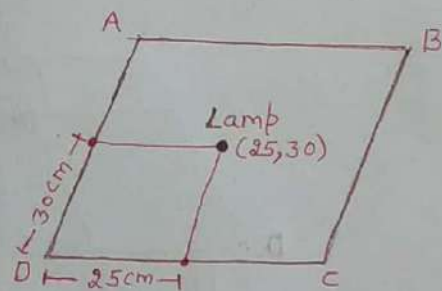


	39.05
3	1525.0000
	9
69	625
	621
780	400
	000
7805	40000
	39025

(iii) if the position of the lamp is exactly at the centre of the table, then

$$\begin{aligned} \text{the length of the table} &= 2 \times 25 \text{ cm} \\ &= 50 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{breadth of the table} &= 2 \times 30 \text{ cm} \\ &= 60 \text{ cm} \end{aligned}$$

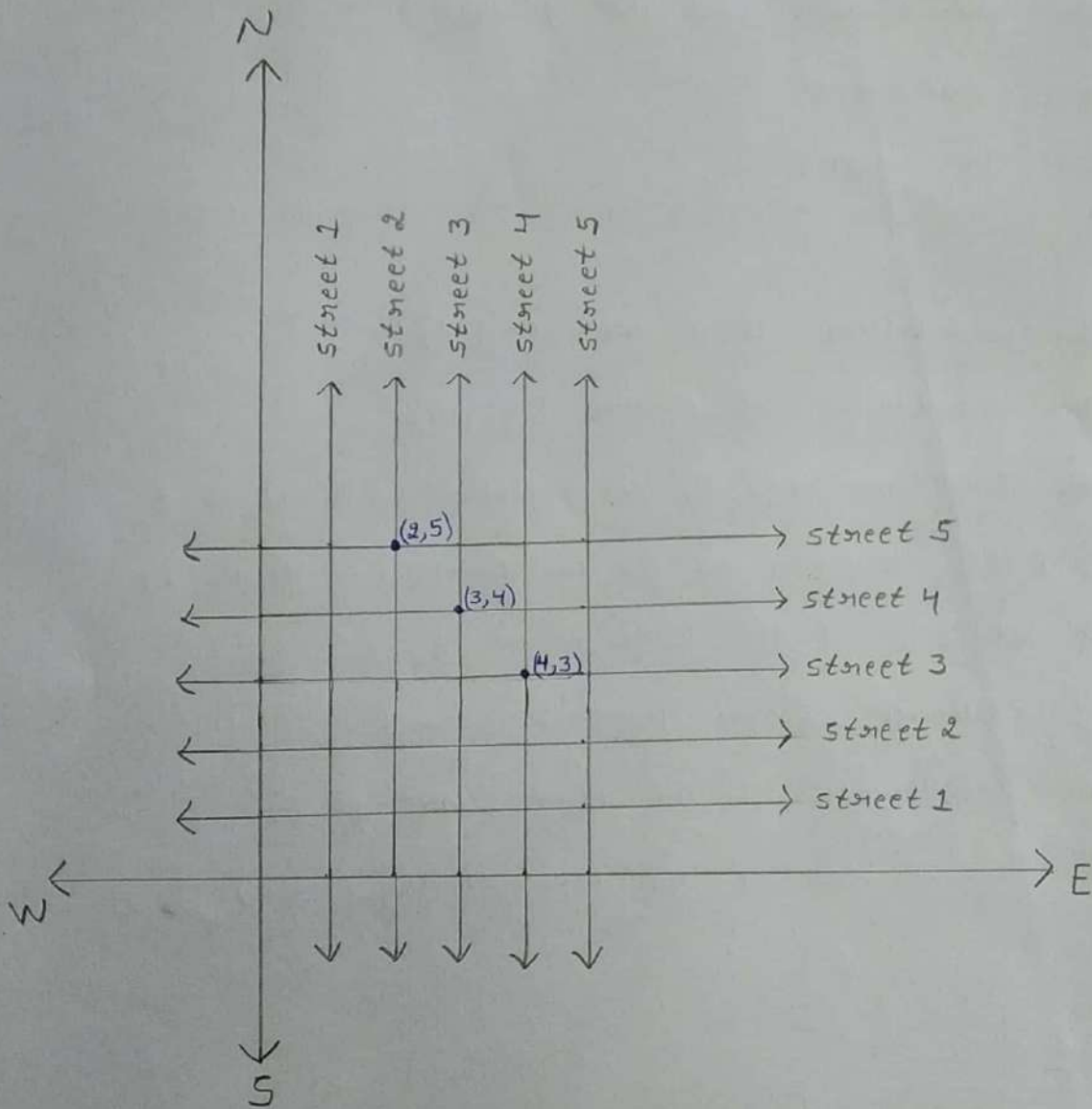


Thus dimensions of the table is 50cm x 60cm

Q.2

2

The street plan is shown in figure given below.



(i) only one cross-street referred to as (4,3).

(ii) only one cross-street referred to as (3,4).

EX - 3.2

Q. 1

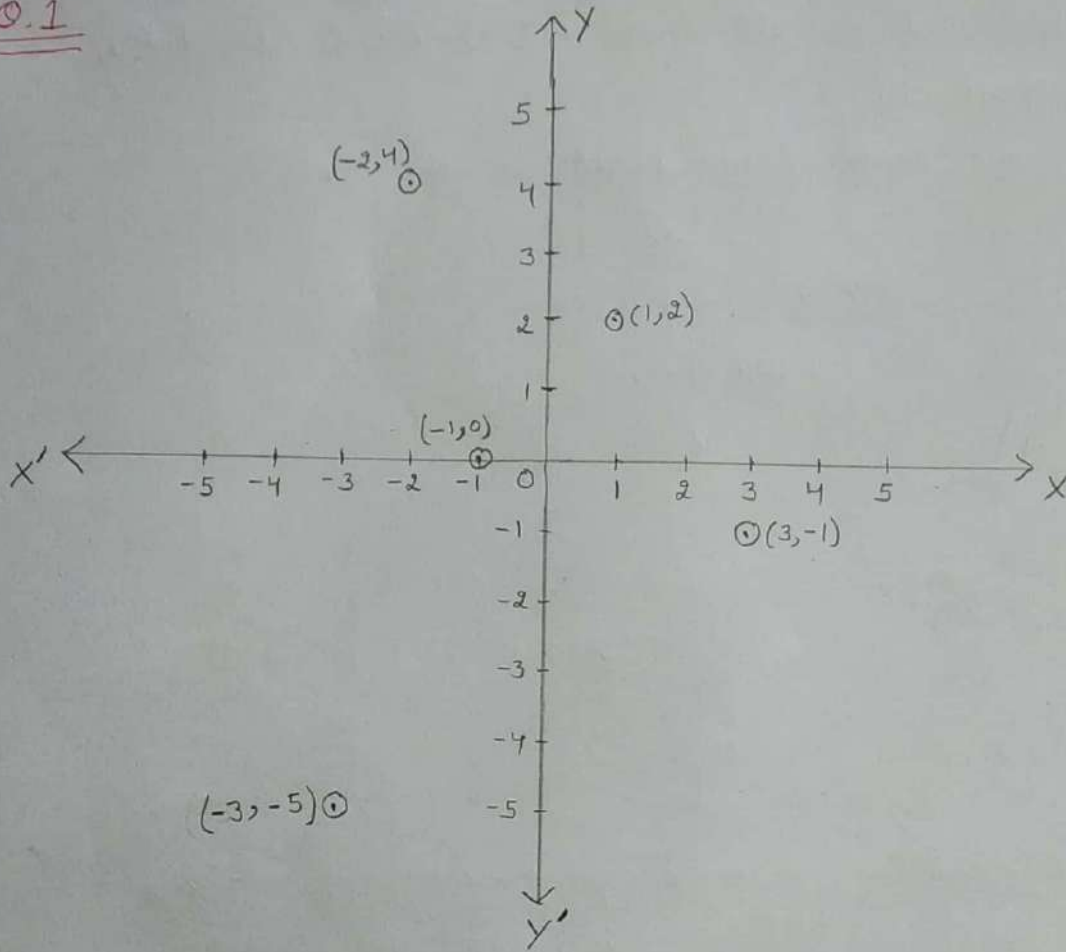
- (i) the x-axis and the y-axis.
- (ii) Quadrants
- (iii) The origin

Q. 2

- (i) The coordinates of B are $(-5, 2)$
- (ii) The coordinates of C are $(5, -5)$
- (iii) The point identified by the coordinates $(-3, -5)$ is E
- (iv) The point identified by the coordinates $(2, -4)$ is G
- (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 $(-3, 0)$

EX - 3.3

Q.1



The point $(-2, 4)$ lies in the quadrant II

The point $(3, -1)$ lies in the quadrant IV

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

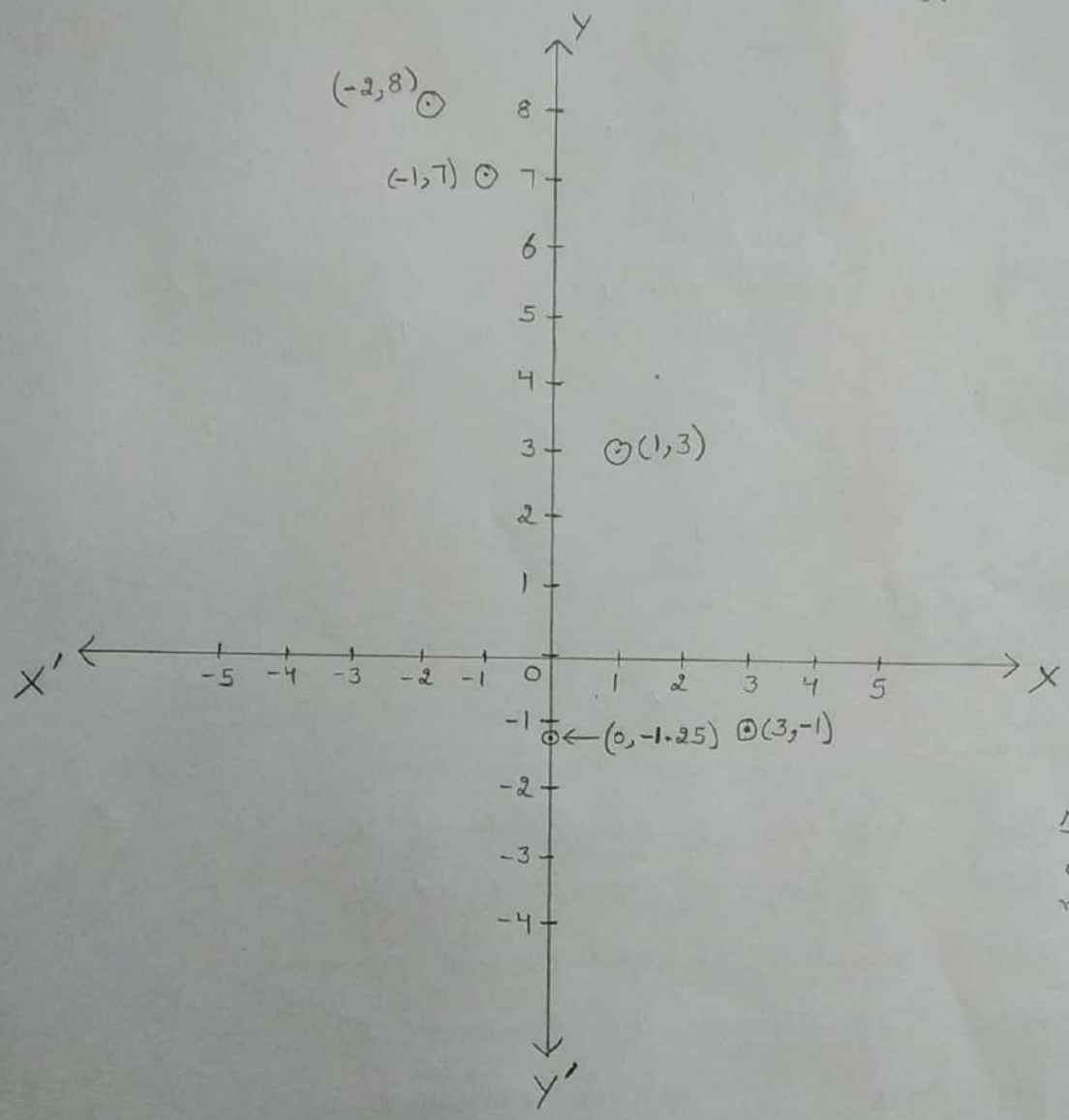
The point $(1, 2)$ lies in the quadrant I

The point $(-3, -5)$ lies in the quadrant III.

Q. 2

The Pairs of numbers given in the table can be represented by the points $(-2, 8)$, $(-1, 7)$, $(0, -1.25)$, $(1, 3)$ and $(3, -1)$

use the scale $1 \text{ cm} = 1 \text{ unit}$ on the axes.



Note
0.25
means
 $\frac{25}{100} = \frac{1}{4}$
 $\frac{1}{4}$ th