Case Study 1:- In class X, 4 students are seated at the point P,Q,R and S as shown in the figure and the teacher standing at the point T.
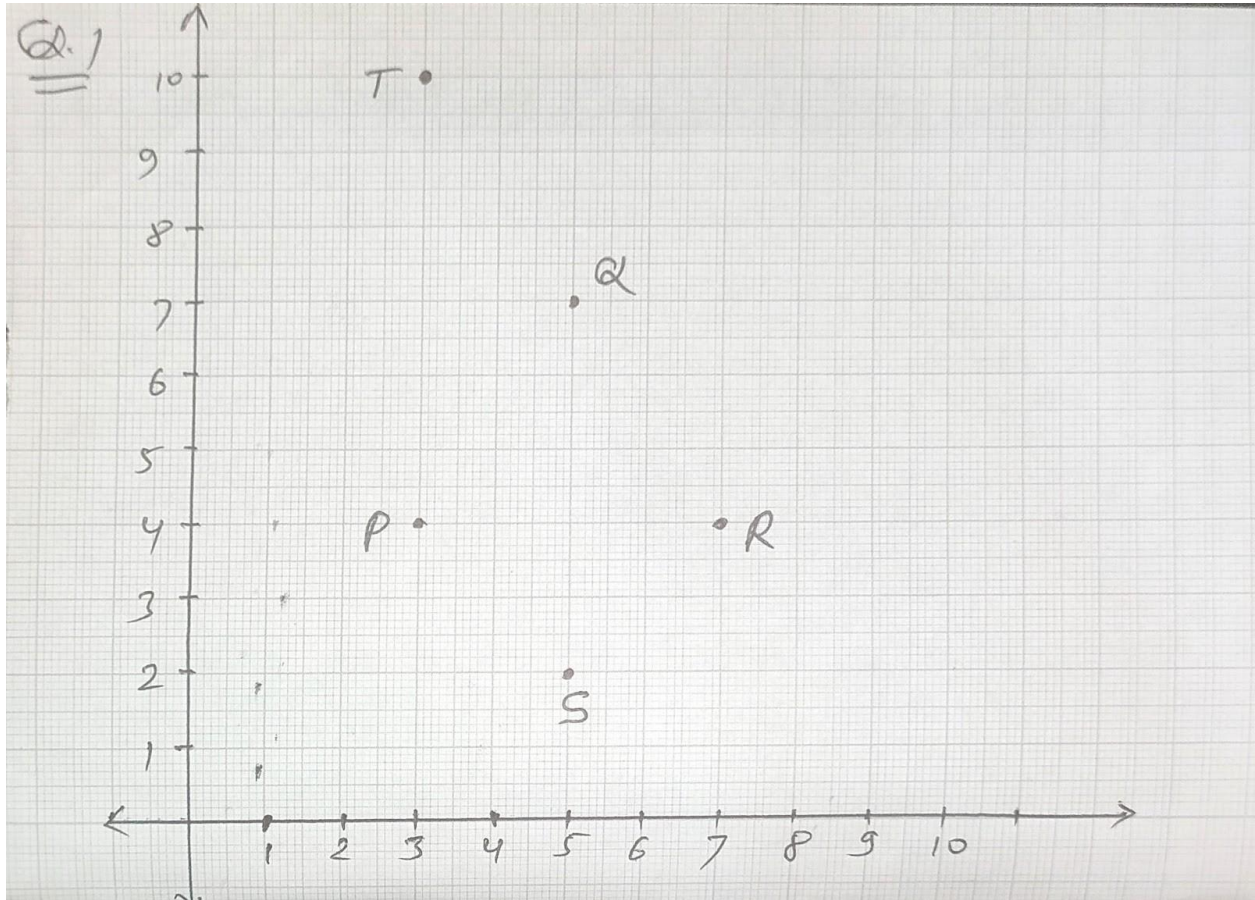
1. What is the coordinate of point T.

Mark only one oval.

⬭ (3,4)

⬭ (3,0)

⬭ (10,3)

⬭ (3,10)

Ans: (3,10) The x coordinate of T is 3 and y is 10.

2. The distance between the points P and R .

Mark only one oval.

○ 4 units

○ - 4 units

○ 5 units

○ 3 units

Ans: 4 units

Use distance formula coordinate of P is (3,4) and R is (7,4) ,

$$AB=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

3 .The distance between the points T and R .

Mark only one oval.

○ $\sqrt{50}$

○ $\sqrt{60}$

○ $\sqrt{61}$

○ $\sqrt{52}$

Ans: $\sqrt{52}$

Use

distance

formula

4. Determine if the point T,Q,R are collinear

Mark only one oval.

○ yes

○ no

○ can not be determine

Ans: Yes

As they lie in the same straight line.

5.The shape of quadrilateral PQRS is

Mark only one oval.

○ square

○ Rhombus

○ Kite

○ Parrallelogram

Ans: Kite as it follows the properties of kite.

case study :- 2 .The line segment joining the points A(3,-4) and B(1,2) is divided four equal parts at the points P, Q, R respectively.

A*-------------*---------------*---------------*--------------------------- *B

P　　　　　Q　　　　　R
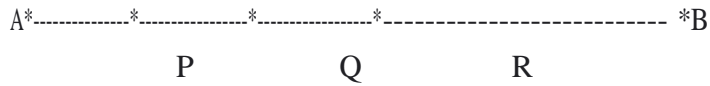
Q6. In what ratio point P divide AB .
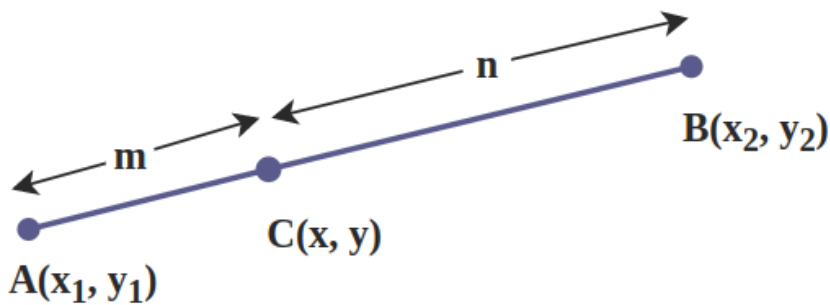
Mark only one oval.

○ 1 : 4

○ 1 : 3

○ 3 : 1

○ 4 : 1

Internal Section Formula

$$C(x, y) = \left\{ \frac{mx_2 + nx_1}{m + n}, \frac{my_2 + ny_1}{m + n} \right\}$$

Ans: (1:3)

7 . In what ratio point Q divide PR .

Mark only one oval.

○ 1 : 3

○ 1 : 2

○ 1 : 1

○ 1 : 4

Ans: (1:1)

The distance of PQ is equal to distance of RQ

8 . What is the coordinate of point P .

Mark only one oval.

( ) (5, - 5)

( ) (-5/2 ,5/2)

( ) (-5/2 , -5/2)

( ) (5/2 , -5/2)

Ans: (5/2 , -5/2)

9 . What is the coordinate of point Q .

Mark only one oval.

○ (-1 , 2)

○ (2 , 1)

○ (-2 , -1)

○ (2 , -1)

Ans: (2,-1)

10. What is the coordinate of point R .

Mark only one oval.

○ (3/2 , 1/2)

○ (3/2 , -1/2)

○ (-3/2 ,1/2)

○ (-3/2, -1/2)

Ans: (3/2 , 1/2)