QUESTION -1

In the picture , ABCD is a parallelogram .

a) What are the coordinates of C ?

b) What are the coordinates of the midpoint of

the diagonal BD ?

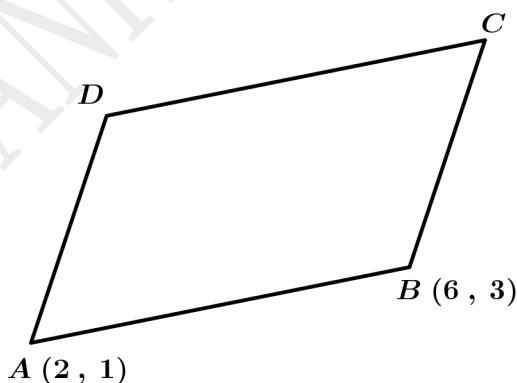c) Write the coordinates of the point at which

the diagonals intersect .

$(4,5)$ D

C

$B\,(8,3)$

$A\,(2,1)$
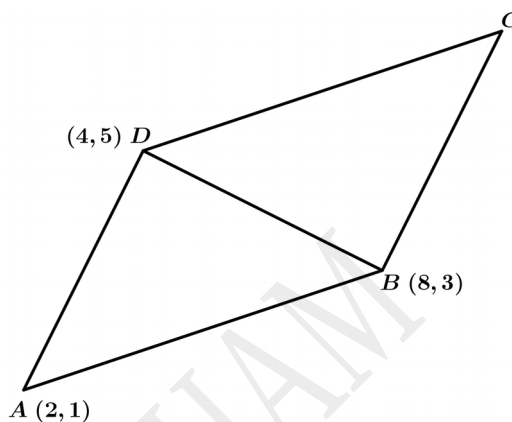
QUESTION -2

In parallelogram ABCD ,   A (2 , 1) and B(6 , 3) .

The coordinates of the point at which its diagonals

intersect are   (5 , 4) .
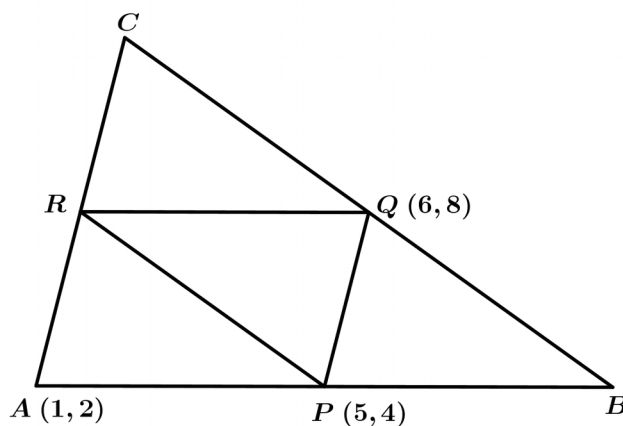
a) What are the coordinates of the midpoint of the

diagonal AC ?

b) Find the coordinates of the other two vertices of the parallelogram .

C

D

$B\,(6\,,\,3)$

$A\,(2\,,\,1)$

QUESTION - 3
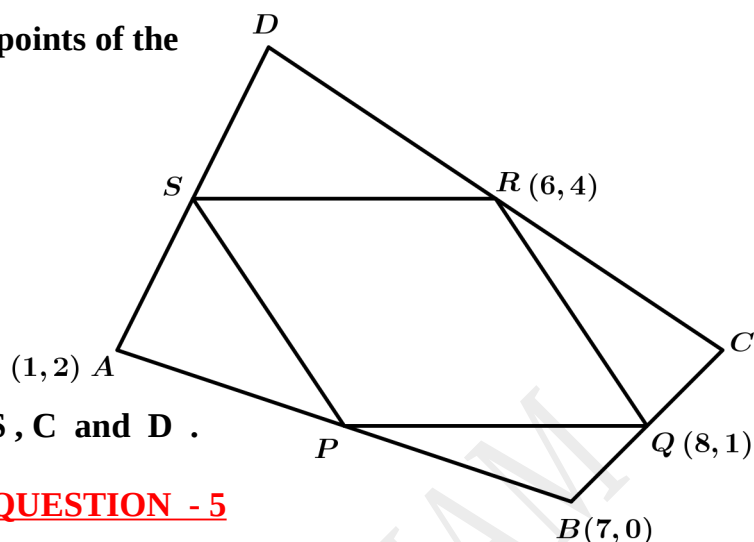
In the picture P , Q , R are the midpoints of the

sides of the triangle .

a) Give the most suitable name for the

quadrilateral APQR .

b) Write the coordinates of the points R , B

and C .

C

R

$Q\,(6,8)$

$A\,(1,2)$

$P\,(5,4)$

B

In the picture P , Q , R , S are the midpoints of the

sides of the quadrilateral ABCD .

a) What are the coordinates of   P ?

b) Give the most suitable name for the

   quadrilateral PQRS   .

c) Write the coordinates of the points S , C and D .

D

S

$R\,(6,4)$

C

$(1,2)\ A$

P

$Q\,(8,1)$

$B\,(7,0)$

In triangle   OAB , $O\,(0,0)$, $A\,(1,5)$, $B\,(6,4)$.

a) What is the length of   OA   ?

b) Prove that OAB is an isosceles right triangle .

c) What are the coordinates of the circum centre and circumradius of the triangle OAB ?

d) If (x,y) is a point on the circumcircle of the triangle OAB ,   prove that

   $$x^2 + y^2 - 6x - 4y = 0$$

In triangle   ABC , $A\,(3,2)$, $B\,(11,8)$, $C\,(4,9)$.

a) What is the length of   AB   ?

b) Prove that ABC is an isosceles triangle .

c) What are the coordinates of the midpoint of the side   AB   ?

d) What is the perpendicular distance from the vertex C to its opposite side ?

e) Compute the area of the triangle ABC .

A circle is drawn with the line joining $(1,2)$ and $(7,10)$ as diameter .

a) What are the coordinates of the centre of the circle ?

b) What is the radius of the circle ?

c) Write the equation of the circle .

d) What are the coordinates of the points at which the the circle cuts the y axis ?

<p style="text-align:center"><u>QUESTION - 8</u></p>

The coordinates of the points A and B are $(1,2)$ and $(6,7)$. P is a point on the line

AB with $AP : PB = 1 : 4$.

a) What are the coordinates of P ?

b) What are the coordinates of the midpoint of the line PB ?

c) Find the coordinates of the point Q on the line AB with $AQ : QB = 3 : 2$.

<p style="text-align:center"><u>QUESTION -9</u></p>

Consider a line passing through the points $(1,4)$ and $(3,10)$

a) Find the slope of the line .

b) Write the coordinates of two more points on this line .

c) Check whether $(13,40)$ is a point on this line or not .

c) Prove that the points $(1,3)$, $(3,10)$ and $(15,48)$ are the vertices of a triangle .

<p style="text-align:center"><u>QUESTION - 10</u></p>

Consider a line passing through the points $(2,8)$ and $(4,6)$

a) Find the slope of the line .

b) Write the coordinates of two more points on this line .

c) If (x,y) is a point on this line , prove that $x + y - 10 = 0$.

c) Find the coordinates of the point at which this line cuts the axes .

<p style="text-align:center"><u>QUESTION - 11</u></p>

The equation of a line is $x + 2y - 6 = 0$.

a) Find the coordinates of the point at which this line cuts the x axis .

b) Find the coordinates of the point at which this line cuts the y axis .

<p style="text-align:center">SARATH A S , VMC GHSS WANDOOR , MALAPPURAM</p>

c) Find the slope of the line .

d) Is this line passes through the point $(4,1)$? Justify your answer .

<h2 style="text-align:center; color:red"><u>QUESTION - 12</u></h2>

a) What is the length of the line AB in the figure ?
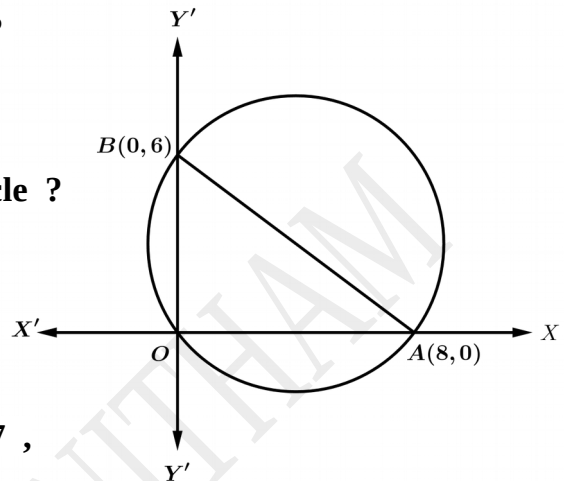
b) What is the radius of the circle in the figure ?

c) What are the coordinates of the centre of the circle ?

d) If (x,y) is a point on this circle , prove that

$$x^2 + y^2 - 8x - 6y = 0 .$$

e) If the x coordinate of a point on this circle is 7 ,
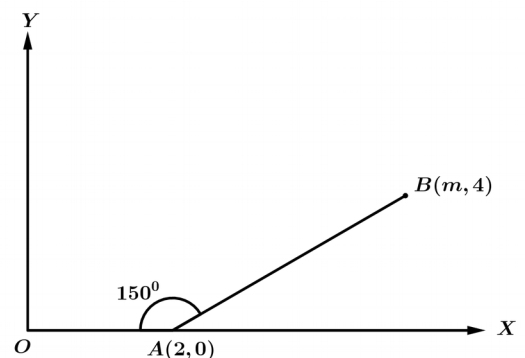
   what will be its y coordinate ?

<h2 style="text-align:center; color:red"><u>QUESTION - 13</u></h2>

a) What is the perpendicular distance from the point

   B to the x axis ?

b) What is the value of m ?

c) If (x,y) is a point on the line AB ,

   prove that $\dfrac{x-2}{y} = \sqrt{3}$.

<h2 style="text-align:center; color:red"><u>QUESTION - 13</u></h2>
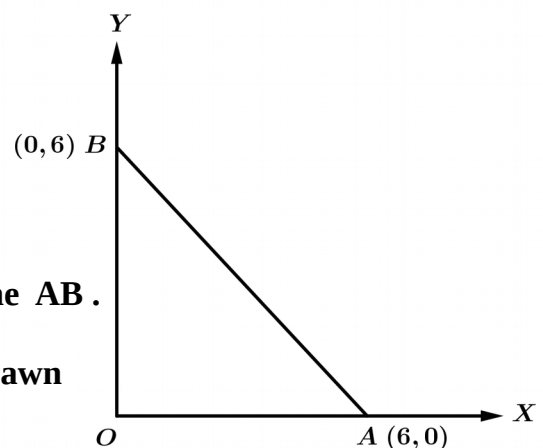
a) Compute the slope of the line AB .

b) If (x,y) is a point on the line AB , what is the

   relation between x and y ?

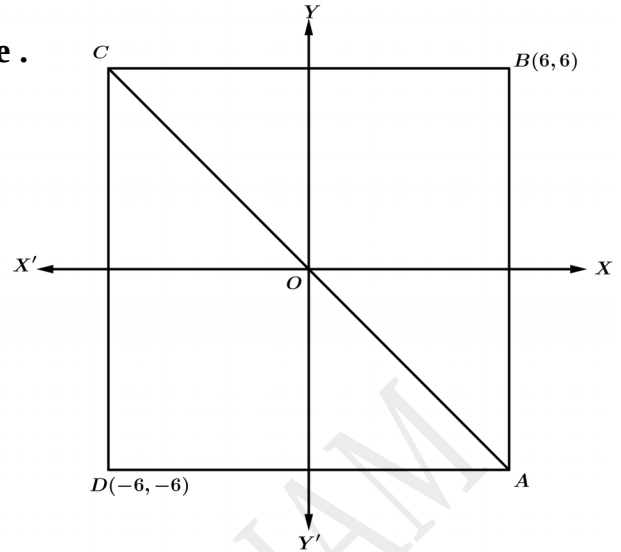**c) Write the coordinates of other two points on the line AB .**

d) What are the coordinates of a point on the circle drawn

   with AB as diameter ?

QUESTION - 14

In the picture origin is the midpoint of the square .

a) **Write down the coordinates of A and C .**

b) Compute the slope of the line AC .

c) If (x, y) **is a point on the line AC , what is**

the relation between x **and** y **?**

d) Write the coordinates of other two points

on the line AC .

e) Prove that the product of the slopes of the diagonals of the square is -1 **.**

QUESTION - 14

The slope of a line passing through $(4, 3)$ **is** $\dfrac{3}{2}$ **.**

a) Write down the coordinates of another two points on this line .

b) What are the coordinates of the point at which the line cuts the x **axis .**

c) What are the coordinates of the point at which the line cuts the y **axis .**

d) What is the equation of this line ?