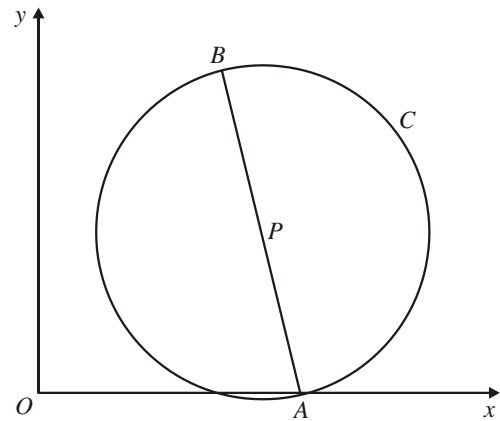


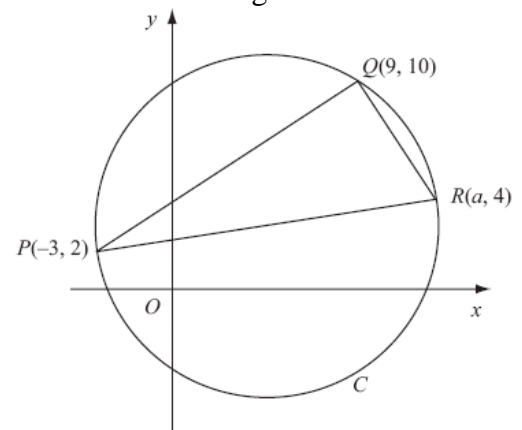
- Find the midpoint of the following points
 - A(3, 1) and B(5, -2)
 - P(-3, $\sqrt{7}$) and Q(1, $-5\sqrt{7}$)
 - M(2a, 5a) and N(-8a, -10a)
 - G(a², -a²) and H(5a, -4a)
- The line joining A(-1,4) and B(3, 6) is a diameter of circle C.
 - Find the centre and equation for C.
 - Find the equation for line AB.
 - Find the equation of the line perpendicular to AB that passes through B.
- Two circles C1 and C2 have equations $(x - 2)^2 + y^2 = 9$ and $(x - 5)^2 + y^2 = 9$ respectively.
 - For each of these circles state the radius and the coordinates of the centre.
 - Sketch the circles C1 and C2 on the same diagram.
 - Find the exact distance between the points of intersection of C1 and C2.
- The circle C has equation $x^2 + y^2 - 6x + 4y = 12$
 - Find the centre and radius of C.
The point P(-1, 1) and the point Q(7, -5) both lie on C.
 - Show that PQ is a diameter of C.
The point R lies on the positive y-axis and the angle PRQ = 90°.
 - Find the coordinates of R.
- The line CD with the equation $6x - 5y - 42 = 0$ is a chord of length 8 for a circle of centre (2, -1). Find the equation of the circle.

- Show that the line $y = x - 8$ does not intersect with the circle $(x + 3)^2 + (y - 4)^2 = 100$.
- In the figure below A(9,4) and B(3,5) are the end of points of a diameter of the circle C.



Find

- the exact length of AB
 - the coordinates of the midpoint P of AB
 - an equation for the circle C
- The points P(-3, 2), Q(9, 10) and R(a, 4) lie on the circle C, as shown in the diagram above.



Given that PR is a diameter of circle C,

- show that $a = 13$,
- find the equation for the line PQ,
- find an equation for the circle C.
- find the equation through the centre of the circle perpendicular to the diameter