Practice Questions

Q4. If a circle passes through the point (0, 0) (a, 0), (0, b) then find the coordinates of its centre.

S4. This is also a simple application of class notes formulas, like que-1. By substitution of coordinates in the general equation of the circle given by

$$x^2 + y^2 + 2gx + 2fy + c = 0$$

, we have

$$c = 0$$
$$a^2 + 2ga + c = 0$$
$$b^2 + 2fb + c = 0$$

From these three equations, we get center as

$$-g = \frac{a}{2}$$
$$-f = \frac{b}{2}$$

And radius to be,

$$r^2 = g^2 + f^2 - c = \frac{a^2 + b^2}{4}$$

Hence, the equation of the circle is

$$\left(x - \frac{a}{2}\right)^2 + \left(y - \frac{b}{2}\right)^2 = \frac{a^2 + b^2}{4}$$