Practice Questions

Q2. The equation of the circle having centre (1, -2) and passing through the point of intersection of the lines $3x + y = 14$ and $2x + 5y = 18$ is

1. $x^2 + y^2 - 2x + 4y - 20 = 0$

2. $x^2 + y^2 - 2x - 4y - 20 = 0$

3. $x^2 + y^2 + 2x - 4y - 20 = 0$

4. $x^2 + y^2 + 2x + 4y - 20 = 0$

Page-197, 202

S2. Note that to get intersection point of two lines we just need to solve two linear equation problem.

$$3x + y - 14 = 0$$
$$2x + 5y - 18 = 0$$

This gives us intersection point: $x = 4, y = 2$. Now radius of circle is:

$$r^2 = (4 - 1)^2 + (2 + 2)^2$$
$$= 9 + 16 = 25$$

We have radius = 5. Then c in general form is,

$$c = g^2 + f^2 - r^2$$
$$= (-1)^2 + (2)^2 - 25 = -20$$

So general form is,

$$x^2 + y^2 - 2x + 4y - 20 = 0$$

Hence option (1) is right.