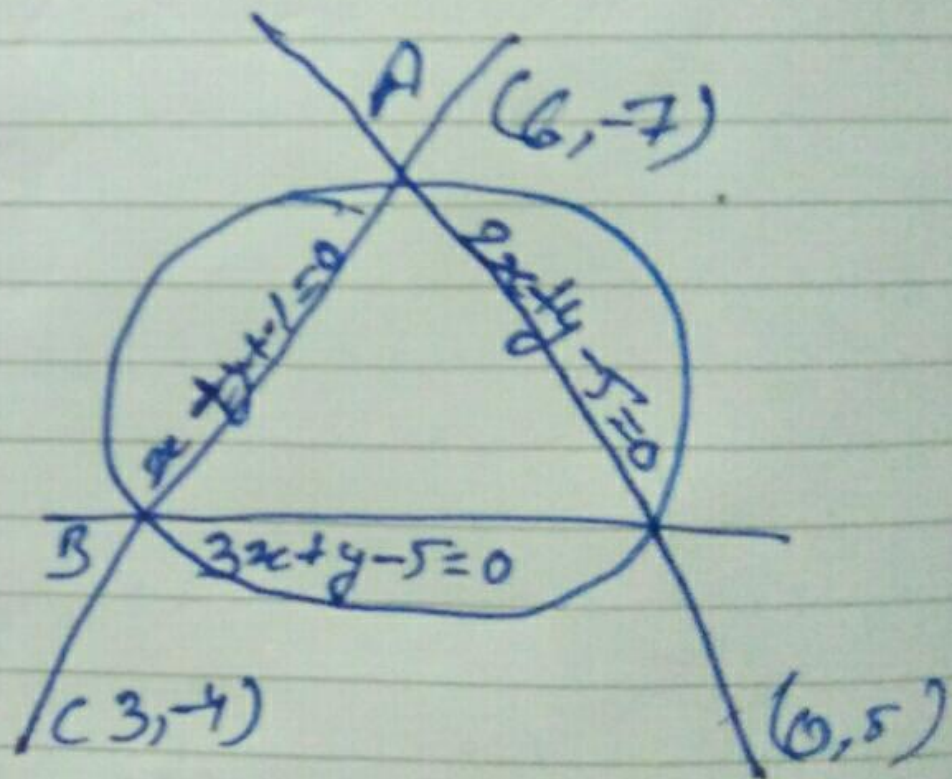


⑥ Side of the triangle

$$x + y + 1 = 0$$

$$3x + y - 5 = 0$$

$$2x + y - 5 = 0$$



Solving eqs. (i), (ii) & (iii) we get

coordinates of the vertices of the Δ are $(3, -4)$, $(0, 5)$ & $(6, 7)$

Let $x^2 + y^2 - 2gx + 2fy + c = 0$ represent the circumscribed circle

$$25 + 6g - 8f + c = 0$$

$$25 + 10f + c = 0$$

$$85 + 12g - 14f + c = 0$$

from (2) - (3)

$$6g - 18f = 0 \rightarrow g = 3f$$

from (4) - (3)

$$60 + 12g - 24f = 0 \rightarrow g - 2f + 5 = 0$$

Putting the value of g from eq. (5) in (6)

$$3f - 2f + 5 = 0 \Rightarrow f = -5$$

$$g = 3f = 3 \times (-5) = -15$$

$$\text{Putting } f = -5 \text{ in (3)} \quad c = -25 + 50 = 25$$

Hence from $x^2 + y^2 - 30x - 10y + 25 = 0$
which is the required circle