

Ques 1-

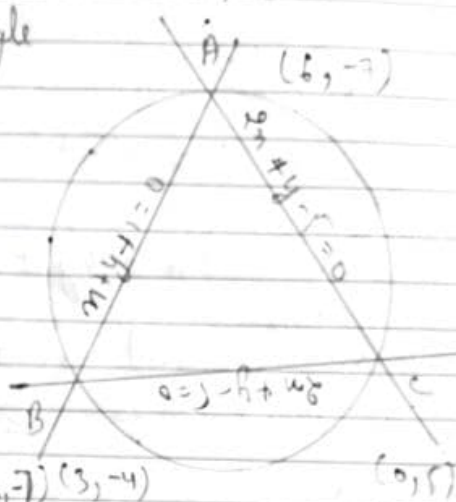
Ans

Sides of triangle

$$x + y + 1 = 0$$

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

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



eq. (i), (ii) & (iii)

$\Delta$ , as  $(3, -4)$ ,  $(0, 5)$  &  $(6, -7)$

$$x^2 + y^2 + 2gx + 2fy + c = 0 \quad \text{--- (1)}$$

$$25 + 6g - 8f + c = 0 \quad \text{--- (2)}$$

$$25 + 16f + c = 0 \quad \text{--- (3)}$$

$$85 + 12g - 14f + c = 0 \quad \text{--- (4)}$$

from (2) - (3) :-

$$6g - 18f = 0 \Rightarrow g = 3f \quad \text{--- (5)}$$

from (4) - (3) :-  $60 + 12g - 24f = 0 \Rightarrow g - 2f + 5 = 0$

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

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

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

put  $f = -5$

$$c = -25 + 50 = 25$$

$$x^2 + y^2 - 30x - 10y + 25 = 0$$

required circle.