

$$6y - 6 = 5x - 5$$

$$5x - 6y - 5 + 6 = 0$$

$$\Rightarrow 5x - 6y + 1 = 0$$

$$3.) x^2 + y^2 - 8x + 14y + 40 = 0$$

sol

$$\text{The centre} = (4, -7)$$

$$\text{slope of } R = \frac{0 + 7}{1 - 4} = \frac{7}{-3}$$

$$\therefore \text{slope of } T = \frac{-3}{7}$$

$$\text{Equation of } T = (y - y_1) = m(x - x_1)$$

$$(y - 0) = \frac{-3}{7}(x - 1)$$

$$7y - 7 = -3x + 3$$

$$3x + 7y - 7 - 3 = 0$$

$$3x + 7y - 10 = 0$$

NAME: Nwachukwu Chinemelum Nnamdi

MATRIC NUMBER: 19/ENG04/033

DEPARTMENT: Elect/Elect Engineering...

1.) $x^2 + y^2 - 5x - y + 4 = 0$ at point $(1, 0)$

Sol

The centre = $\left(\frac{5}{2}, \frac{1}{2}\right)$

The slope of $R = \frac{0 - \frac{1}{2}}{1 - \frac{5}{2}} = \frac{+\frac{1}{2}}{+\frac{3}{2}}$

$= \frac{1}{2} \times \frac{2}{3} = \frac{2}{6}$

\therefore Slope of $T = -\frac{6}{2} = -3$

Equation of $T = (y - y_1) = m(x - x_1)$

$y - 0 = -3(x - 1)$

$y - 0 = -3x + 3$

$= 3x + y - 3 = 0$

2.) $x^2 + y^2 - 12x - 12y + 47 = 0$ at point $(1, 0)$

Sol

The centre = $(6, 6)$

Slope of $R = \frac{0 - 6}{1 - 6} = \frac{-6}{5}$

\therefore Slope of $T = \frac{5}{6}$

Equation of $T = (y - y_1) = m(x - x_1)$

$y - 0 = \frac{5}{6}(x - 1)$

$6(y - 0) = 5(x - 1)$