IFEOLUWA PROMISE. S/N: 182.
19/ENG02/021
COMPUTER ENGINEERING.
MAT 10

① Find the equation of the tangent at the point (1,0) on the circle $x^2+y^2-5x-y+4=0$.

Using General formular

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

Equation to tangent at point (x_1,y_1)

$xx_1+yy_1+g(x+x_1)+f(y+y_1)+c=0$.

$2g=-5$

$g=-\frac{5}{2}$

$-1=2f$

$f=-\frac{1}{2}$

$x(1)+y(0)+g(x+1)+f(y+0)+4=0$.

$x+(-\frac{5}{2})(x+1)-\frac{1}{2}(y+0)+4=0$.

$x-\frac{5}{2}x-\frac{5}{2}-\frac{1}{2}y+4=0$.

$x-\frac{5x}{2}-\frac{5}{2}-\frac{y}{2}+4=0$.

$2x-5x-5-y+8=0$.

$-3x-y+3=0$

Equation.

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

General formular.

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

Equation to tangent at point (x_1,y_1)

$xx_1+yy_1+g(x+x_1)+f(y+y_1)+c=0$.

$2g=-12$

$g=-6$.

$2f=-12$

$f=-6$

$x(1)+y(0)+g(x+1)+f(y+0)+c=0$

$x-6(x+1)-6(y+0)+47=0$.

$x-6x-6-6y+47=0$.

$-5x-6y+41=0$.

OR

$5x+6y-41=0$.

③ Equation.

$x^2+y^2-8x+14y+40=0$ $(1,0$

General formular

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

Equation to tangent at $(x_1,y$

$xx_1+yy_1+g(x+x_1)+f(y+y_1)+$

$2g=-8$

$g=-4$

$2f=14$

$f=7$.

$x(1)+y(0)+g(x+x_1)+f(y+y_1)$

$x-4(x+1)+7(y+0)+40=0$

$x-4x-4+7y+40=0$.

$3x+7y+36=0$.