Plot a circle with the equation . Find the equation of a tangent to this circle at point (-2,5)

1. First, identify the variables a, b and r in the above equation where a, b is the center of this circle and r is the radius. Hence, a = -3 b = 1 and r =
2. Pass these three parameters a, b and r to your MATLAB function like –

*function myPlot(a,b,r)*

1. Now plot your *circle* using the parametric equations such as:

X = a + r\*cos(theta)

Y = b + r\*sin(theta)

Where theta goes from 0 to 2\*pi

1. Now to calculate the slope of your tangent, you will need the slope of your radius. As radius and tangent are perpendicular to each other, the product of their slopes is -1.
2. So calculate slope of radius using the 2 points, center and the given point on the circle. Which are (-3,1) and (-2,5) .
3. Slope of Tangent = -(1/Slope of Radius)
4. Now you have the slope of your tangent. So find the equation of your tangent using the below equation:

NewY – y1 = slope\*(NewX – x1) ……….here x1,y1 are (-2,5) point of contact.

1. In MATLAB, to do this, define NewX from -5 to 5 and then using the above equation, find NewY and plot (NewX,NewY)
2. Use a hold on command before two plots so that both the plots can be seen together in one graph.