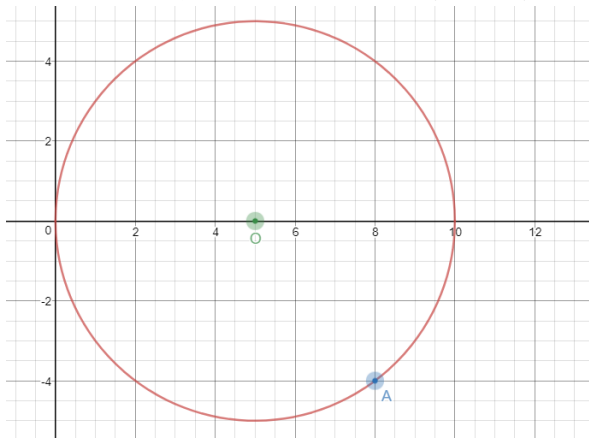


Answer on Question #76990 – Math – Calculus

We have equation of circle  $(x - 5)^2 + y^2 = 25$ , radius = 5, center is in point  $O(5,0)$



$$A = (x_1, y_1) = (8, -4), O(5,0)$$

Find equation that passes through two points O and A:

$$\frac{x - 5}{8 - 5} = \frac{y - 0}{4 - 0}$$

$$-4(x - 5) = 3y$$

$$-4x + 20 = 3y$$

Then write equation in the standard form  $Ax + By + C = 0$

$$-4x - 3y + 20 = 0$$

The equation of the line that is tangent to the circle is the line that is perpendicular to the previous line, so the equation is  $A(y - y_1) - B(x - x_1) = 0$ :

$$-4(y + 4) + 3(x - 8) = 0$$

$$-4y - 16 + 3x - 24 = 0$$

$$4y = 3x - 40$$

$$y = \frac{3}{4}x - 10$$

