

1. TANGENTS, ARCLENGTHS AN POLAR COORDINATES

The spiral is graphed out by the parametric equation

$$x(t) = t \cos t \quad y(t) = t \sin t$$

where $t \geq 0$

(1) What is equation for the line which touches the point on the curve $(0, \pi/2)$?

(2) Write down an integral which computes the length of a spiral from $t = 0$ to $t = 2\pi$.

