

1. Find an equation for the line tangent to the curve $x = \sec t$, $y = \tan t$, $-\frac{\pi}{2} < t < \frac{\pi}{2}$ at the point where $t = \frac{\pi}{4}$.

2. Find the length of the curve $x = r \cos t$, $y = r \sin t$, $0 \leq t \leq 2\pi$ (using the arc length formula). What have you just done?

3. Find the area of the surface generated by revolving $x = \cos t$, $y = 1 + \sin t$, $0 \leq t \leq 2\pi$ about the x -axis.

Q: April says May is a liar. May says June is a liar. June says April and May are both liars. If only one person is telling the truth, who is it?