

Subject: Session 66

Year. Month. Date. ()

$$1. N_y - M_n = \frac{0}{r^2} - \frac{0}{r^2} = 0 \cdot 2\pi$$

$$2. \int_C F \cdot dr = \int_C F \cdot \frac{dr}{dt} dt = \int_0^{2\pi} \frac{\sin^2 \theta + \cos^2 \theta}{r^2} d\theta$$
$$= \int_0^{2\pi} \frac{1}{r^2} d\theta = 2\pi \neq 0$$

3. because it's tangent to the unit circle.

$$4. \nabla \theta = \left\langle \frac{1}{1 + \left(\frac{y}{x}\right)^2}, \frac{-y}{x^2} \right\rangle = \left\langle \frac{x}{x^2 + y^2}, \frac{-y}{x^2 + y^2} \right\rangle$$