Math2210 Quiz 1   (Sections 10.4, 11.1)   Summer, 2010   Dylan Zwick

Name _____ Date _____

Instructions: Please show all of your work as partial credit will be given where appropriate, **and** there may be no credit given for problems where there is no work shown. All answers should be completely simplified, unless otherwise stated.

1. For $x = \sin 2t$ and $y = \cos 2t$ such that $0 \leq t \leq \pi$, eliminate the parameter and graph the curve. Indicate if the curve is simple and/or closed.

   Hint : $x^2 + y^2 = ?$
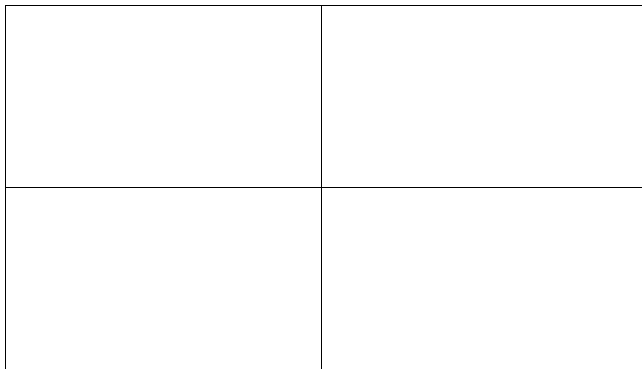
Simple: T   or   F   (circle one)

Closed: T   or   F   (circle one)

2. Find the distance between the points (1, 3, 5) and (3, 3, 3).

distance = _____

3. Find $\dfrac{dy}{dx}$ and $\dfrac{d^2 y}{dx^2}$ (without eliminating the parameter) for $x = 4t^3 + 2t^2$ and $y = 3t^4$ such that $t \neq 0$.

$$\dfrac{dy}{dx} = \underline{\hspace{9cm}}$$

$$\dfrac{d^2 y}{dx^2} = \underline{\hspace{9cm}}$$

4. Find the equation of the sphere that has the line segment joining the two points in question #2 as a diameter.

Center of sphere: _____

Equation of sphere: _____