MATH 117 SPRING 2001: SECOND LITTLE QUIZ

CRISTIAN GURITA

Problem 1. *(1 point) For the plane curve given by* $x = 3t^2, y = 4t^3$*, find* dy/dx *and* d^2y/dx^2 **without** *eliminating the parameter.*

Problem 2. *(1 point) For the plane curve given by* $x = 4t^2\mathbf{i} + 4t\mathbf{j}$*, find the unit tangent vector* $\mathbf{T}$ *and the curvature* $\kappa(t)$ *at the point* $t_1 = \frac{1}{2}$*.*

Problem 3. *(1 point) Determine if the series* $\sum_{k=2}^{\infty} \dfrac{1}{\sqrt{k^2-1}}$ *is convergent or divergent.*