Quiz 2, Calculus III – No Calculators

Dr. Graham-Squire, Fall 2013

Name: _____

1. (2 points) Calculate the limit: $\lim_{t\to 1}\left(\sqrt{t}\mathbf{i}+\frac{\ln t}{3t-3}\mathbf{j}+\frac{t-1}{t^2-2t+1}\mathbf{k}\right)$

2. (4 points) Find the curvature of the plane curve $\mathbf{r}(t)=\langle e^t, 4t\rangle$ at the point (1,0). Leave your answer in exact form.

3. (4 points) Find the indefinite integral: $\int (4\sqrt{t}\mathbf{i} + t\sin t\mathbf{j} + e^{2t}\mathbf{k}\, dt$