Quiz 2

MATH 241 Quiz 2

Answer the questions in the spaces provided. If you run out of room for an answer, continue on the back of the page.

Name: _____

1. An object has the position $\left(-\frac{1}{\pi^2}, 0, -\frac{1}{\pi^2}\right)$ at $t = 1$, velocity $\mathbf{i} + \frac{1}{2}e^2\mathbf{j}$ at $t = 1$, and acceleration $\mathbf{a}(t) = \frac{2}{t^2}\mathbf{i} + e^{2t}\mathbf{j} + \cos(\pi t)\mathbf{k}$. Find the vector valued functions to describe the object's position and velocity.

2. Compute the limit

$$\lim_{t \to -3} \ln(-t)\mathbf{i} + \frac{t^2 + 2t - 3}{t + 3}\mathbf{j} + \frac{\sin(t + 3)}{t + 3}\mathbf{k}$$