

Math 126 Quiz 6

NAME _____

[1] Suppose a particle in space has velocity function $\mathbf{v}(t) = \langle \sin t, \frac{1}{t}, t^3 \rangle$ where $t > 0$. Its position at $t = 1$ is $\langle 2, 3, 4 \rangle$.

(a) Find the position function of the particle.

(b) Find the acceleration function of the particle.

[2] Let $f(x, y, z) = \frac{e^{\sin x}}{y}$. Compute all first order partials of f .

3 Let $f(x, y) = \sqrt{1 - x^2 + y}$.

(a) Calculate the domain and the range of f .

(b) Sketch the level curves for $z = 1$, $z = -2$, and $z = 2$.