

Name:

SOLUTION

Quiz #3 - September 23, 2008

1. Find the velocity, acceleration and speed of a particle with position function $\vec{r}(t) = (t^2 + 1, t^3, t^2 - 1)$.

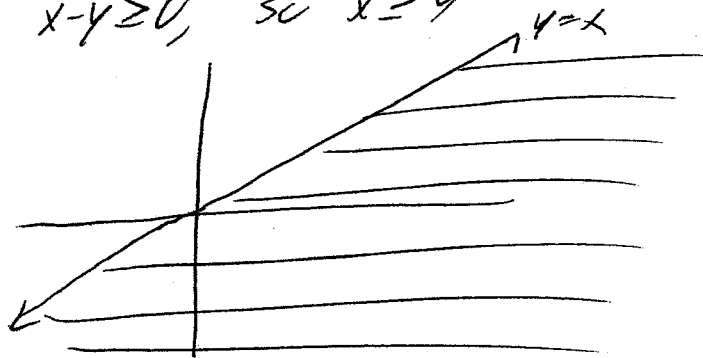
$$\vec{v} = (2t, 3t^2, 2t)$$

$$\vec{a} = (2, 6t, 2)$$

$$\text{speed} = |\vec{v}| = \sqrt{4t^2 + 9t^4 + 4t^2} = \sqrt{8t^2 + 9t^4}$$

2. Sketch the domain of the function $f(x, y) = \sqrt{x-y}$

Need $x-y \geq 0$, so $x \geq y$



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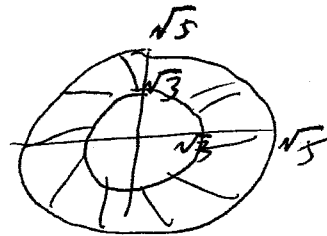
SOLUTIONS

Quiz #3 - September 25, 2008

1. Find and sketch the domain of the function $f(x, y) = \arcsin(x^2 + y^2 - 4)$

Need $-1 \leq x^2 + y^2 - 4 \leq 1$

$$3 \leq x^2 + y^2 \leq 5$$



2. Sketch the graph of the function $f(x, y) = y^2 + 1$

