ESP Quiz 2 (Kouba)
Please PRINT your name here : _____
This quiz is due next Tuesday at the beginning of ESP class.

1.) (20 pts.) Assume that $z = f(x,y)$, $x = ut^3$, and $y = u^2 - t$. Compute $\dfrac{\partial z}{\partial t}$, $\dfrac{\partial z}{\partial u}$, and $\dfrac{\partial^2 z}{\partial u^2}$.

2.) (10 pts. each) Determine the following limits.

a.) $\displaystyle\lim_{(x,y)\to(0,0)} \dfrac{x^3 - y^3}{x - y}$

b.) $\displaystyle\lim_{(x,y)\to(0,0)} \dfrac{x^{1/2}y}{x + y^2}$

3.) (10 pts.) Find all points (x,y) satisfying $z_x = 0$ and $z_y = 0$ for $z = 3x^2 - 2xy + y^2 - 8y$.

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