Section ____________ **Name** ______________________________

TA ________________ **Student Number** ______________________________

Math 126B **Calculus With Analytic Geometry III** **Spring 1995**

PROFICIENCY QUIZ #1

5/4/95

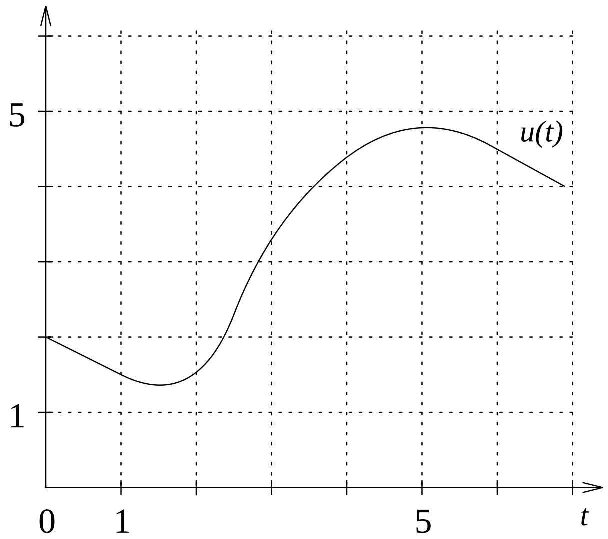
There are four problems on this quiz. You have 25 minutes. Only correct answers count. You do not need to show your work.

1. $f(x, y, z) = \sin(xy^3)$. Find f_{xx}.

$f_{xx} =$ $\boxed{}$

2. The function $u(t)$ is given by its graph shown below. We define a new function $g(x, y)$ by $g(x, y) = u(x - y^2)$. Find $g_y(5, \sqrt{2})$. Your answer will be a number.

$g_y(5, \sqrt{2}) =$ $\boxed{}$



(over)

3. Let $h(x, y)$ be a function of x and y whose formula we do not know.

Evaluate the derivative $\dfrac{dh(t^2+1, 1-t)}{dt}$.

$$\frac{dh(t^2+1, 1-t)}{dt} = \boxed{}$$

4. We are given that $f(x, y) = e^{x-y}$, $a(u, v) = \sin uv$, and $b(u, v) = u^2 + v^2$. Find $\dfrac{\partial f(a(u, v), b(u, v))}{\partial u}$ when $(u, v) = (0, 2)$. Your answer wil be a number.

$$\frac{\partial f(a(u, v), b(u, v))}{\partial u} = \boxed{}$$