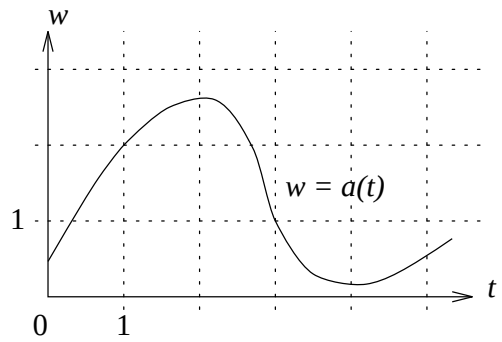
Math 126B **Calculus With Analytic Geometry III** **Fall 1995**

QUIZ #7 ANSWERS

11/9/95

In each of the following problems, we are given two functions: $f(x,y) = x^2 - 3xy$ and $w = a(t)$, defined by its graph below.



1. (3 points) Compute the components of the gradient of f at an arbitrary point (x,y).

$$\text{grad } f = \boxed{(2x - 3y, -3x)}$$

2. (2 points) Compute $f_{xy}(2,1)$.

$$f_{xy}(2,1) = \boxed{-3}$$

3. (5 points) Compute $\dfrac{d}{dt} f(a(t), a(t))$ at the point $t = 3$. Your answer will be a number.

$$\left.\frac{d}{dt} f(a(t), a(t))\right|_{t=3} = \boxed{8}$$