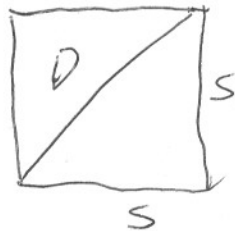MA125 Quiz 1

Name:

1) (8 pts) A square has sides of length S. Let D be the length of the diagonal. Write a formula that gives the area of the square as a function of D.
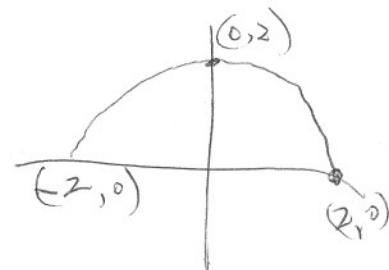
$$D^2 = S^2 + S^2 = 2S^2$$

$$\frac{D^2}{2} = S^2 = A$$

$$Area = \frac{D^2}{2}$$

2) (8 pts) Find the domain and range of the function

$$f(x) = \sqrt{4 - x^2}$$

Domain: $[-2, 2]$

Range: $[0, 2]$

(OVER)

3) (9 pts) Describe the motion of a particle with position (x, y) as t varies in the given interval:

$$x = 3 + 2\cos t, \quad y = 1 + 2\sin t, \quad \pi/2 \le t \le 3\pi/2$$

The particle Traces The left half of a circle of radius 2 centered at $(3,1)$