MAC2313 Quiz 3 Name _____

1. (10 points) Suppose that a particle moves along the curve

$$f(t) = \left\langle \frac{2t^{3/2}}{3}, \sin t, \cos t \right\rangle, \qquad 0 \leq t \leq 3.$$

(assume that $t$ is in seconds, and the coordinates are in meters)

a) What is the speed of the particle at time $t = 0$? at $t = 3$?

Answer: _____

Answer: _____

b) How far does the particle travel (arc length)?

Answer: _____

c) What is the *average* speed of the particle?

Answer: _____