

QUIZ 1

(35MINS, 30PTS)

Please write down your name, SID, and solutions discernably.

Name :

SID :

Score :

1. (10pts : 5pts each) Find dy/dx and d^2y/dx^2 . For which values of t is the curve concave upward?

(a) $x = \cos 2t, y = \sin 2t$

(b) $x = e^{t^2}, y = e^{3t+2}$

2. (10pts) Find the area enclosed by the curve $x = t^3 - 5t^2 + 6t$, $y = \sqrt{t}$ and y -axis.

3. (10pts) Find the exact length of the curve,

$$x = t \sin 2t, \quad y = t \cos 2t, \quad 0 \leq t \leq 1.$$