

# King Fahd University of Petroleum and Minerals

MATH 201

QUIZ #1 Term 153

Dr. A. Khalfallah

Name:

Section: Serial:

ID:

**Q1.** Convert the curve  $x = \cos^2 t$ ,  $y = 1 - \sin t$ ,  $0 \leq t \leq \pi/2$  into Cartesian equations.  
Sketch the curve with the direction of the motion.

**Q2** Find  $\frac{dy}{dx}$  and  $\frac{d^2y}{dx^2}$ . For which values of  $t$  is the curve concave upward?  
 $x = \cos 2t$ ,  $y = \cos t$ ,  $0 < t < \pi$ .

**Q3** Find the area enclosed by the curve  $x = t^2 - 2t$ ,  $y = \sqrt{t}$  and the **y-axis**.