

Quiz 10
Math 231 Section DD5
November 30, 2006

Name: _____

Consider the plane region P bounded by one arch of the *cycloid* with parameterization

$$x = \theta - \sin(\theta), \quad y = 1 - \cos(\theta), \quad 0 \leq \theta \leq 2\pi$$

and the x -axis. The figure is drawn on the board.

1) Write down the integral giving the area of the region P . Do NOT evaluate the integral.

2) Write down the integral giving the volume of the solid obtained by rotating the region P around the x -axis. Do NOT evaluate the integral.

3) Write down the integral giving the volume of the solid obtained by rotating the region P around the line $y = -2$. Do NOT evaluate the integral.