Math 182 Quiz 16 Name: _____

April 22, 2003

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

1. Find the slope of the tangent line to the curve $r = \ln \theta$ at $\theta = e$

2. Find the area enclosed by one leaf of $r = \sin(4\theta)$

3. Find the arc-length of the polar curve $r = e^{2\theta}$, $0 < \theta < 2\pi$

4. Find the Taylor series expansion about the point $x = \pi/2$ of $f(x) = \cos x$

5. Find the fourth degree Taylor polynomial of $f(x) = \dfrac{\sin x}{1+x}$