

Math 124 Worksheet #4

May 4, 2007

- $f(\theta) = \sqrt{3}\cos \theta - \sin \theta$
 - Find the roots/zeros of the function f .
 - For what values of θ does f have a horizontal tangent?
 - What are the maximum and minimum values of the function? (Consider the graph of the function.)
- Evaluate the following.
 - $\frac{d}{dx} \left(\frac{e^x \tan x}{\cos x} \right)$
 - If $g(t) = (2 + 3t + 5t^3)^7 \cos t$, what is $g'(0)$?
 - $\frac{d}{dr} (5^{\csc(\pi r)} + 8e^{\sqrt{r}})$
- Find the equation of the tangent line to the curve $x^2 - \sin(xy) + y^3 = 1$ at the point $(1, 0)$.