TECHNICAL CALCULUS II

Spring 1998

Exam 1

Name _____

(20) 1. a) Calculate $\tan \dfrac{4\pi}{3}$.

b) Prove $\dfrac{\sin 3x}{\sin x} - \dfrac{\cos 3x}{\cos x} = 2$

(20) 2. $y \cos 2x = x \sin 2y\,,\ y' =$

(15) 3. $y = \dfrac{x^2}{\arctan 2x}\,,\ y' =$

(25) 4. Sketch the graph: $y = x - \cos x\,.$

(20) 5. Find the magnitude and direction of the velocity at $t = \frac{1}{12}$ of an object which moves so that $x(t) = \sin(2\pi t)\,,\ y(t) = \cos(2\pi t)\,.$