COMPUTER PROJECT #1

Due Monday, February 18, in class.

1. Plot the slope field for the differential equation $dy/dx = \cos x + \cos y$. Print your result and then sketch a solution curve through each of the points $(0, 0)$, $(0, 1)$, $(0, 2)$, $(1, 0)$, $(1, 1)$, $(1, 2)$.

2. Find the general solution of the differential equation $y' = \sqrt{x + y}$. What technique did Maple use?

3. Use Euler's method to solve differential equation $dy/dx = 1 + yx^2$, $y(0) = 0$ on the interval $[0, 2]$ with 20 equal steps.