1. Hand in Problems Due February 6

Problem 1

Prologue: Our problems about the Euler method do not ask you to evaluate Euler approximations at points other than the "grid points". This problem is about determining and evaluating piecewise linear functions determined by a slightly different form of data. It is a "functions" muscle builder too.

A function f is continuous and linear on each interval [1,2], [2,3], [3,4], but has "kinks" at 2 and 3. The slope of f on [1,2] is -2, the slope of f on [3,4] is 6 and $f(1) = 7$, $f(4) = -2$. Find $f(2.5)$.

Problem 2

Solve $y' = e^y$, $y(0) = 0$. At what time does y "blow up"? What is $y(-1)$?.