Week 9
MATH 34B
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21.2 Use two steps of Euler's method (ie. $\Delta t = 0.2$) for the equation $y' = y - t$ with initial condition $y(0) = 1$ to find $y(0.4)$.

21.3 Use Euler's method to find $y(0.4)$ if $y' = 1 - y^2$ and $y(0) = 0.5$, with a time step of 0.1.

21.7 A full tank initially (at t=0) contains 19 gallons. Then water is removed at a rate of 1+t gallons per minute where t is the time in minutes.

    (a) How much water remains in t minutes?

    (b) When (in minutes) is the tank half empty?

23.2 The number of items sold at a price of x dollars per item is 2000-300x. It costs 9 dollars to make the item. What price should be charged to make the most profit?

23.? In 1990 a fatal disease evolves to which 40 percent of a population of 5 million trees is susceptible. The proportion of susceptible trees which survive for a period of t years beyond 1990 is e^{-t}. How quickly is the disease killing off trees at the start of 1992? When will the population be reduced to 80 percent of the level in 1990?