MA 120-04 §1.1 - 3.3	Test #1	score	Name:	24 February 2003
1. A potato that inside a 350° denote the tectime <i>t</i> , where since the pot Sketch a grap time <i>t</i> that r (put numbers given data.	at is at room temperat t^2 -degree oven for one h emperature in degrees e t is measured in min rato was placed in the or- ph of temperature T as effects the given inform s on) the axes that correct (9 points)	ed (<i>t</i>) at ed of ale he		

2. How much money should be invested now at a continuously compounded rate of 5% so that in 30 years there is a total of \$50,000? *(9 points)*

- 3. If you want an investment to double every 12 years, what annual interest rate is needed? You may use the rule of 70 to estimate the answer, if you like. *(9 points)*
- 4. A function f(x) is graphed to the right. Estimate the derivative of the function at x = 1, i.e., estimate the value of f'(1). Then sketch the graph of f'(x) on the same set of axes. (9 points)





7. Estimate the value of f'(30) from the following table. (10 points)

x	10	20	30	40
$f(\mathbf{x})$	17.1	22.5	26.0	29.1

8. Find an equation of the tangent line to the graph of $y = x^2 - x + 1$ when x = 2. (9 points)

9. Find the derivative of the following functions. (9 points each)

(a)
$$f(x) = 3x^8 - 2x^3 + x^2 - 17$$

(b) $f(x) = (x^2 + 3x - 10)^8$

(c) $f(x) = e^{x^2 + 3}$