Rates of Change in Exponential & Logarithmic Functions

Average Rate of Change $\Rightarrow m_{\text{secant}} = \dfrac{f(x_2) - f(x_1)}{x_2 - x_1}$

Estimate of Instantaneous Rate of Change $\Rightarrow m_{\text{secant}} = \dfrac{f(a+h) - f(a)}{h}$

Assigned Work:

p.507 # 4, 7, 11abc

c

Dec 7-6:19 PM

4. (a) $A = 6000(1 + 0.075)^n$

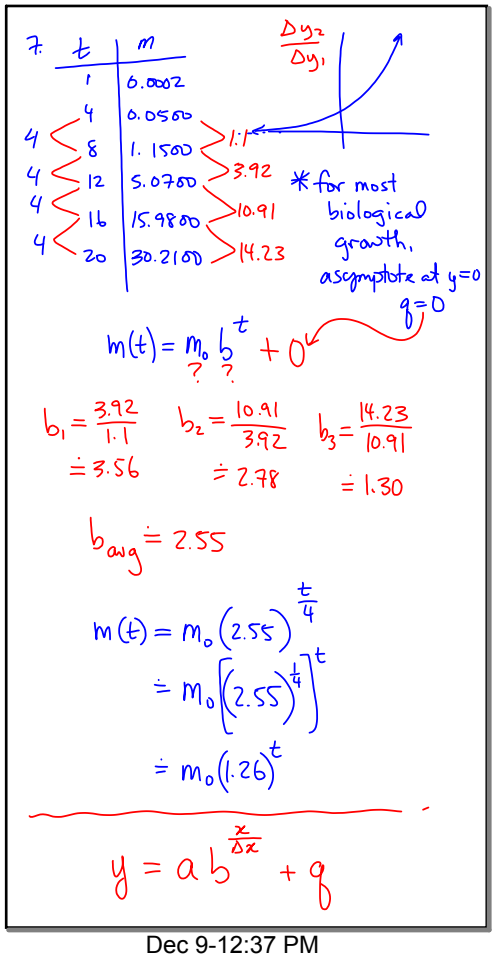
(c) semi-annual

$A(n) = 6000\left(1 + \dfrac{0.075}{2}\right)^n$

$\text{iRoC}_{(\text{at } 10 \text{ yrs})} = \dfrac{A(20+0.01) - A(20)}{0.01}$

$\Rightarrow$ 20 compounding periods $\div$ _____

Dec 9-12:34 PM



Dec 9-12:37 PM

11(b) $S(d) = 93 \log d + 65$

$$\text{avgRoC} = \frac{S(100) - S(10)}{100 - 10}$$

$$= \frac{(93\log 100 + 65) - (93\log 10 + 65)}{90}$$

$$= \frac{93(2) - 93(1)}{90}$$

$$\doteq 1.03$$

(c) $\text{iRoC}_{d=10} = \dfrac{S(10.001) - S(10)}{0.001}$

$\doteq$ _____

$\text{iRoC}_{d=100} = \dfrac{S(100.001) - S(100)}{0.001}$

Dec 9-12:51 PM