Day 7 HW Solutions: The Forgotten Account

1. $62.31   because: $A(5) = 50(1.045)^5$

2. $A(t) = 50(1.045)^t$

4. Answer: Approximately 32 years. Here's how:

$$50(1.045)^t = 200$$
$$\Rightarrow 1.045^t = 4$$
$$\Rightarrow \log 1.045^t = \log 4$$
$$\Rightarrow t \cdot \log 1.045 = \log 4$$
$$\Rightarrow t = \frac{\log 4}{\log 1.045}$$

5. Ted is wrong. An increase from $50 to $500 is a 10 fold increase, meaning the amount of money has increased by a factor of 10. Whereas an increase from $500 to $1000 is only a two-fold increase. So, it won't take nearly as long for the money to increase from $500 to $1000.

   Now, use the same process shown in question #4 to find out how long it will actually take for the money to increase to $1000.