Directions: Please answer the following questions and make sure your answer are legible. If you don’t show work and/or I can’t follow it, I won’t give partial credit. You may use a calculator (not the calculator function on other technology) and the Formula Sheet that I provide you, nothing else. Good Luck.

1. (3 points) For each of the following parts, indicate if it is an Ordinary Annuity, Annuity Due, or Not an Annuity.
   (a) Michael pays his $875 mortgage each month. *Ord. Ann (by default)*
   (b) Lucille pays the heating bill each month, her bill amount depends on how much she ran the heater that month. **NOT an Annuity**
   (c) George Michael got car insurance (for his stair-car) on March 11, he will pay $64 each month, and his first payment was due the day he got his insurance. **Annuity Due**

2. (7 points) Oscar decides to start contributing $2300 each quarter to a special account earmarked for legal fees (he has a lot of legal troubles). He makes his first deposit the day he opens the account. He expects the account to earn 6.7% interest.
   (a) How much will the account be worth after 8 years?
   (b) How much interest will Oscar have earned?

\[
FV = PMT \times S_{n|i} \times (1 + i) \\
FV = 2300 \times 41.85570579(1 + 0.067/4) \\
FV = 97950.77 \text{ in account after } 8 \text{ years}
\]

\[
b) \text{Total Deposited: } 2300 \times 33 = 73600 \\
\text{Interest: } 97950.77 - 73600 = 24350.77
\]

3. (5 points) Find the monthly payments needed for Tobias to accumulate $100,000 in 11 years assuming an interest rate of 4%.

\[
FV = PMT \times S_{n|i} \\
100,000 = PMT \times 165.4714871 \\
8.33 = PMT
\]

\[
S_{n|i} = \left( \frac{1 + 0.04/12}{(0.04/12)} \right)^{132} - 1 = 165.4714871
\]