Name: _____

MATH 100
Fall 2023
HW 9: Due 10/30

"Whether we are working to pay off student loans, credit card debt, paying for elder or childcare, or even trying to save for retirement, the idea of the American dream still remains just that—a dream."
–Adrienne Moore

Problem 1. (10pt) Robert Schock is taking out a loan to finance an expansion for his business, *Electricity Bill*. The bank offers him a $37,000 discount note for 10 months at 10.2% annual interest.

(a) What are the maturity and discount for this loan?

(b) What are the proceeds for this loan?

(c) At the end of the 10 months, how much does Robert owe the bank?

(d) How much does Robert pay in total for this loan?

Problem 2. (10pt) Inna Vesta Moore places $7,800 of her savings into a savings account that earns 0.57% annual interest, compounded monthly.

(a) How much will be in the account after 9 years?

(b) How much interest has the account earned after 9 years?

(c) How long would it take the account to have $50,000?

Problem 3. (10pt) Annita needs a loan. After discussing with a loan officer, she is offered a loan with an annual interest rate of 11.43%, compounded monthly.

(a) What is the nominal interest rate?

(b) What is the effective interest rate for this loan?

(c) If Annita will take out the loan for 4 years and will not be able to pay back more than $11,000, what is the most she can take out now? That is, what is the amount that she could borrow now so that after 4 years, she would owe $11,000?