Name: _____

MATH 108
Fall 2023
HW 7: Due 09/28

"The people who did the collateralized mortgage obligations sold them to pension funds, then sold them short, then bought credit default swap insurance on them, are just amazing. They are a law unto themselves."
— Ben Stein

Problem 1. (10pt) E.M. Perior wants to take out a loan for... let's call it a small construction project.[1] He approaches PJMorgan & Follow Bank for a loan to fund the project. After discussions with the bank, they offer him a $3 trillion loan at 8.33% annual interest, compounded monthly over a period of 24 years. Mr. Perior's payments will be due at the end of every month. "Good... *good*," Mr. Perior stated as he accepted the terms.

(a) What are E.M. Perior's monthly payments?

(b) What is the total interest E.M. Perior will pay on this loan?

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[1] It'll be no moon.

Problem 2. (10pt) Theo Guysel wants to take out a loan to self-publish his new book *Oh, the Places You'll Go... after Repaying Student Loans*. Guysel takes out a loan for $15,000 at 3.7% quarterly interest, compounded quarterly. The loan is for a period of 5 years with end of the quarter payments of $824.97.

   (a) How much does Guysel still owe after 3 years?

   (b) After 3 years, how much of Guysel's next payment will actually go towards paying off the loan? How much is paid in interest for this payment?