Name: _____

MATH 108
Spring 2024
HW 3: Due 01/31

"[Waitress] Aww, honey there are other fish in the sea. [Sally] I don't wanna hear the specials, lady!"

— *Waitress & Sally Solomon, Third Rock from the Sun*

Problem 1. (10pts) Suppose that the CPI in 2023 was approximately 290.503. According to the US Bureau of Labor Statistics, the current CPI is 300.728.

(a) Find the inflation rate from 2023 to 2024.

(b) If the inflation rate in (a) continues from 2024 to 2025, estimate the cost of a good next year that costs $69.99 this year,

(c) If the inflation rate in (a) remains constant each year, what will the increase in prices be from 2024 to 2030? What percent more will goods cost in 2030 than 2024?

Problem 2. (10pts) Patrick runs a chard stand. Chard being... chard, Patrick needs to take out a loan to help pay for dancers to advertise his product at the local farmer's market to drive up sales. The local bank offers a simple discount note for $5,600 over a period of 8 months at 8.7% annual interest.

(a) What is the maturity for this simple discount note?

(b) What is the discount for this note?

(c) What is the interest Patrick pays on this loan?

(d) How much does Patrick receive from the bank?

(e) At the end of the 8 months, how much does Patrick owe the bank?