Name: _____

MATH 108
Spring 2024
HW 5: Due 02/07

"The answer was so simple, I was too smart to see it!"
— Princess Bubblegum, Adventure Time

Problem 1. (10pts) You want to purchase a collection of Bob Ross paintings. Bank Sinatra offers you two different loan options: a loan with 3.2% annual interest, compounded semiannually or a loan at 3.18% annual interest, compounded continuously.

(a) Which loan appears to be the 'better deal'? Explain.

(b) Compute the effective interest for both loan setups. Which loan setup is better? Explain.

(c) Compute the doubling time for both loan setups. Which loan setup is better? Explain.

Problem 2. (10pts) Reed wants to buy a tablet for his books while he travels. He finds one that he likes for $340. Reed places $240 into an account that earns 1.02% annual interest, compounded continuously. Assume that he makes no additional deposits.

(a) How long until Reed has enough money for the laser?

(b) How long until Reed would have doubled his money?

Problem 3. (10pts) Spencer sold his painting of a man dressed as a T-Rex walking someone else's dog for $2,427. He places all the money into an account that earns 4.7% annual interest, compounded quarterly.

(a) How long until he has double this amount in savings?

(b) How long until this money in the account has increased in value to $200,000?