Name:		
MATH 108	"A wise man should have money in his	
Fall 2023	head, but not in his heart."	
HW 5: Due 09/21	–Jonathan Swift	

**Problem 1.** (10pt) You need a loan to buy a collection of 18th century style wigs. Robobank has given you two different options: either you may take a loan at 2.9% annual interest, compounded quarterly, or a loan at 2.89% 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.** (10pt) Leonard wants to buy a new Helium-Neon laser. The laser costs \$895.99. He will purchase the laser by placing \$600 into an account earning 3.1% annual interest, compounded continuously and saving the money.

- (a) How long until Leonard has enough money for the laser?
- (b) How long until Leonard doubled his money?

**Problem 3.** (10pt) Penny just sold her stuffed bear collection for \$11,460. She places the money into a savings account earning 5.2% annual interest, compounded semiannually.

- (a) How long until the account value has doubled?
- (b) How long until the account contains \$1,000,000?