Name: _____

MATH 108
Spring 2022
Written HW 7: Due 03/28

"There's no such thing as a free lunch."
–Milton Friedman

Problem 1. (10pt) Ms. Currant invests a principal of $3,500 in an account with 8.5% per year simple interest.

(a) How much interest has accumulated after 20 months?

(b) How much is the investment worth after 20 months?

(c) How long until the investment is worth $4,200?

(d) How long until the investment has doubled in value?

Problem 2. (10pt) Colonel Tumeric takes out a short-term loan of $680. The bank issues a 9% discount loan for 90 days.

(a) What is the maturity?

(b) What are the discount and proceeds?

(c) How much is owed after 90 days and how much is paid in total?

(d) What are the nominal and effective interest rates?

Problem 3. (10pt) Professor Mauve invests her money with an investment startup that promises interest returns of 3.5% per year, compounded semiannually. Suppose she initially invests $8,000.

(a) How much is the investment worth in 3 years?

(b) How long until the investment is worth $10,000?

(c) How much should she have invested to have $10,000 after 3 years?

(d) Find the effective interest rate.

Problem 4. (10pt) Mrs. Cobalt takes out a loan of $400,000 at a yearly interest rate of 1.5%, compounded continuously.

(a) How much is owed on the loan after 3 years?

(b) How long until $500,000 is owed on the loan?

(c) How much should the loan have been for if she planned on paying $600,000 after 5 years?

(d) Find the effective interest rate.