

Name: \_\_\_\_\_

MATH 108

Spring 2023

HW 1: Due 01/25

*"I mean not homework. It's not work if you love it."*

*–Alex Dunphy, Modern Family*

**Problem 1.** (10pt) *High Voltage* is an electronics store that, among other products, sells televisions. They sell a particular brand of OLED TV that costs \$949.99. To help drive up sales, they will place the TV on sale for 15% off.

- (a) What is the mark-down on this television, i.e. what is the discount?
- (b) What is the final advertised price for the television?
- (c) How much is the TV after a sales tax of 7%.
- (d) Suppose over next two months, they discount the price by 15% twice, what is the advertised price of the television?

**Problem 2.** (10pt) Suppose that Richard Hoover is driving across the Southwest. After a day of driving, he maps out his travel plans over the next few days. He predicts that the total number of miles he will drive  $d$  days from now is given by  $M(d) = 390d + 135$ .

- (a) What is the slope of  $M(d)$ ? What does it represent?
- (b) What is the  $y$ -intercept of  $M(d)$ ? What does it represent?
- (c) On the plot below, sketch  $M(d)$ .
- (d) Find how many miles he will have driven after 3 total days of driving.