Name: _____

MATH 100

Fall 2022

HW 8: Due 10/17

Problem 1. (10pt) Find the equation of the line with slope $-\frac{2}{3}$ that passes through the point $(-9, 10)$.

Problem 2. (10pt) Find the equation of the line passing through the points $(-5, 8)$ and $(7, 8)$.

Problem 3. (10pt) Let $\ell(x) = 18.2 - 13.7x$. Find the slope and y-intercept of this function.

Problem 4. (10pt) Let $\ell(x) = 57.6x - 1654.8$. Explain why $\ell(x)$ is a linear function. Find the y-intercept and x-intercept of this function.

Problem 5. (10pt) Suppose you work an hourly job where you are paid $17.50 an hour. You have already made $288.75 this week. Let W represent the wages you have been paid by working an addition h hours this week.

(a) Explain why W is a linear function of h.

(b) Explain why $W(h) = 17.50h + 288.75$.

(c) What is the slope and what does it represent?

(d) What is the y-intercept and what does it represent?

Problem 6. (10pt) Let M represent the total amount of money in your account d days from now. Suppose that right now you have $15,000 in your account and that you spend $530 a day.

(a) Find $M(d)$.

(b) What are the slope and y-intercept of $M(d)$? What do they represent?

(c) Find the x-intercept of $M(d)$.

(d) Interpret your answer in (c).