

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

MATH 101

Fall 2023

HW 12: Due 11/06

*"If you think education is expensive, try  
ignorance."*

*–Jeff Rich*

**Problem 1.** (10pt) Consider the linear function  $\ell(x) = \frac{13-11x}{5}$ .

- (a) Find the slope of this function.
- (b) Find the  $y$ -intercept of this function.
- (c) Find the  $x$ -intercept of this function.
- (d) Does the graph of this function contain the point  $(6, -8)$ ? Explain.

**Problem 2.** (10pt) Solve the following equation and verify that your solution is correct:

$$9 - 3(x + 1) = \frac{6 - x}{2}$$

**Problem 3.** (10pt) Solve the following equation:

$$5\sqrt{2}x + 8 = -3(1 - 2x)$$

**Problem 4.** (10pt) Find the equation of the line perpendicular to the line  $y = \pi$  with  $x$ -intercept  $\sqrt{2}$ .