

Wisdom Lane Middle School
Name: _____
Teacher: Mr. Tomeo

Homework #60

Date: _____
Period: _____

Linear Word Problems

- The **point slope form** of a line is of the form $y - y_1 = m(x - x_1)$.
- m is the slope and (x_1, y_1) is a point on the line.
- The slope of a line m is given by $m = \frac{y_2 - y_1}{x_2 - x_1}$.

1. Hector and Jeremy want to make some CD's for their band, Goat Cheese Pizza. Jeremy figures it would cost \$399.00 to produce 1000 CDs. Hector figures it would cost \$54.25 to produce 15 CDs.

a) Write a linear formula in **point slope form** where y is the cost and x is the number of CDs.

b) Put the equation you wrote in part (a) into **slope-intercept** form.

c) Explain what the slope and y -intercept in part (b) mean in this problem.

2. Mrs. Pritcher enters her classroom at 7:00 am and finds the temperature to be 86 degrees. She immediately turns on the air conditioner. By noon the temperature was down to 76 degrees. The temperature went down at an even rate while the air conditioning was running.

a) Write a linear formula in **point slope form** where y is the temperature and x is the time. 7:00 a.m $x=0$.

b) Put the equation you wrote in part (a) into **slope-intercept** form.

c) Explain what the slope and y -intercept in part (b) mean in this problem.

3. Anahi has noticed that how long it takes to get food at her favorite restaurant depends on how many people are in her party. If she just goes with one other person they get their food in about 10 minutes. If she goes with her family, the five of them will take about 16 minutes to get served. You are going to be asked to find an equation to find how long it takes to get served at Anahi's favorite restaurant.

a) Write a linear formula in **point slope form** where y is the amount of people and x is the time.

b) Put the equation you wrote in part (a) into **slope-intercept** form.

c) Explain what the slope and y -intercept in part (b) mean in this problem.

4. Mr. Fretheim put 300 pounds of yard waste in the back of his pickup truck to take it to the composting facility. When the pickup was loaded with this yard waste, the rear bumper was $13 \frac{1}{4}$ inches from the ground. On the way home from the composting facility he stopped at Koncrete Industries to buy some gravel. With 1200 pounds of gravel in the back the rear bumper was 11 inches off the ground. You are going to be asked to write an equation for how far the bumper of the pickup is off the ground.

a) Write a linear formula in **point slope form** where y is the amount of waste and x is the bumper height.

b) Put the equation you wrote in part (a) into **slope-intercept** form.

c) Explain what the slope and y -intercept in part (b) mean in this problem.