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

**Algebra 1 - Central High School**

***“Word Problems – Finding Linear Equations Involving 2 Points”***

1. Suppose a 5-minute overseas call costs $5.91 and a 10-minute call costs $10.86. The cost of the call and the length of the call are related. The cost of each minute is constant.

A. What is the cost, *c,* of a call of *m* minutes duration?

B. How long can you talk on the phone if you have $12 to spend?

2. Biologists have found that the number of chirps some crickets make per minute is related to temperature. The relationship is very close to being linear. When crickets chirp 124 times a minute, it is about 68°F. When they chirp 172 times a minute, it is about 80°F.

A. Find an equation for the line that models this situation.

B. How warm is it when the crickets are chirping 150 times a minute?

3. All tickets for a concert are the same price. The ticket agency adds a fixed fee to every order. A person who orders 5 tickets pays $93. A person who orders 3 tickets pays $57.

A. Write an equation relating the total cost to the number of tickets purchased.

B. How much do 4 tickets cost?

4. 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. They both are correct. You are going to write an equation to find the cost (C) of producing CDs (n).

5. 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 ¼ 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.

6. 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. Write an equation to find the temperature in Mrs. Pritcher’s room.

7. 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.

8. A computer store sells 10 blank CD-ROMs for $15, and 30 blank CD-ROMs for $40. Assume that the number of dollars varies linearly with the number of diskettes. Write a linear equation that relates the two variables.

9. Phoebe Small still has 35 pages of history to be read after she has been reading for 10 minutes, and 5 pages left after she has been reading for 50 minutes. Assume that the number of pages left to read varies linearly with the number of minutes she has been reading.

10 Bathtub Problem: You pull out the plug from the bathtub. After 40 seconds, there are 13 gallons of water left in the tub. One minute after you pull the plug, there are 10 gallons left. Assume that the number of gallons varies linearly with the time since the plug was pulled.

11. Driving Home Problem: As you drive home from the football game, the number of kilometers you are away from home depends on the number of minutes you have been driving. Assume that the distance varies linearly with time. Suppose you are 11 km from home when you have been driving for 10 minutes, and 8 km from home when you have been driving for 15 minutes.

12. Cost of Owning a Car Problem: The number of dollars per month it costs you to own a car is a function of the number of kilometers per month you drive it. Based on information in an issue of Time magazine, the cost varies linearly with the distance, and is $366 per month for 300 km per month, and $510 per month for 1500 km per month.