**1 Variable Linear Word Problems (Review)**

* **Writing Basic Functions**
	+ **One Term (The Answer = Sum of the parts)**
		- Form y=mx

#1: I sell pencils for 8 cents each. Write a function for how much I would earn if I sold x pencils.

* + **Two Terms (The Answer = Unit Rate(x) + Fixed Cost)**
		- Form y=mx+b

#2: Your cell phone costs $20 a month as well as 10 cents a minute. Write a function to calculate your monthly bill if you talk for x minutes.

#3: A plane is at an altitude of 5,000 feet and is descending 300 feet each minute. Write a function to calculate the altitude of the plane.

* + **Percentages**

Must divide percent by 100 to get decimal form before you can use it to do math problems!

The variable ALWAYS gets multiplied by the percent!

#4: Tom earns $200 a week plus a 15% commission. Write a function to represent his earning if he sells x dollars worth of goods.

* **Writing and Solving Functions when the TOTAL (y) is Given**

**Remember: Unit Rate(x) + Flat Fee = Total**

**Remember: CHANGE(x) + START = TOTAL**

#5: You have $14 to spend. Tulip bulbs cost $0.75 each plus $3.00 for shipping. How many can you buy?

#6: A repair bill for my car was $320.00. This bill included $170.00 for parts and an hourly charge for labor. If it took 6 hours to repair my car, how much is the hourly charge for labor?

#7: Sally earns $120 a week plus 12% commission on her sales. How much must she sell in order to earn a total of $180.00?

**2 Variable Linear Word Problems (Systems!)**

**Start by writing each side as a separate equation! Then solve using the method indicated.**

**Form y=mx+b**

**Deciding When 2 Options Are Equal/Equivalent**

#1: Adam and his family are planning to rent a midsize car for a one-day trip. In the Standard Rental Plan, they can rent a car for $52 per day plus 23 cents per mile. In the Deluxe Rental Plan, they can rent a car for $100 per day with 10 cents per mile. How many miles would they need to drive for the two plans to cost the same?

**Breaking Even (Revenue = Expenses)**

#2: A service club is selling copies of their holiday cookbook to raise funds for a project. The printer's set-up charge is $200, and each book costs $2 to print. The cookbooks will sell for $6 each. Write the equations that represent the situation. How many cookbooks must the members sell before they make a profit?

**Form Ax + By = C**

**2 Scenario Problems**

Example: Two bagels and a glass of juice cost $1.20. 3 bagels and 2 glasses of juice cost $2.05. Find the cost of a glass of juice.

 Scenario 1: 2x + y = 1.20

 Scenario2: 3x + 2y = 2.05

#1: Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of $75. The school took in $67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket?



#2:

#3: The sum of two numbers is 1457. Four times the first number minus twice the second number is 8. Find the larger number.

  