Name: _____ Date: _____

Linear and Exponential word problems

$$y = P(1 \pm \%)^x$$

$$Exponential: \quad y = ab^x$$

$$Linear: y = mx + b$$

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

1) Ryan is saving for his college tuition. He has $2,550 in a savings account that pays 6.25% interest compounded monthly. How much money will Ryan have in his account 6 years from now?

Formula:

2) Paul is saving money for college. He put $500 in a savings account. He plans to save $250 each month. How much money will Paul have in his account 3 months from now?

Formula:

3) In 2012 a used car was purchased for $12,329 this year. Each year the car's value decreases 8.5%. What will the car be worth in 2020?

Formula:

4) Misty gets paid 7.25 per hour working at Target. How much money will Misty make if she works 22.5 hours this week?

Formula:

5) Jeremiah owns a business. His first year he made $11,212, each of the following years his profit increased 12%. What will she make in 20 years?

Formula:

6) You want to clean your carpet. The company charges $20 to rent the cleaner plus $12 for each hour you have the cleaner. How much money will you pay if you rent the cleaner for 12 hours?

Formula:

7) Dianna is researching the reproductive rate of genetically modified vegetables to see if they will grow better than others. Right now she has planted 150 plants and they are doubling every year. How many plants can she expect to have after 10 years?

Formula:

8) Rob needs to call an electrician to fix some wiring. The electrician charges a service charge of $50 just to come out to the house and then $25 for each hour he is there. How much money will Rob spend if it takes the electrician 4 ½ hours to complete the job?

Formula:

9) A radioactive material decays at a rate of 40% per hour. You begin with 80 grams of radioactive material. How much will be remaining after 6 hours? How about after 24 hours?

Formula:

10) Globo Inc. is a company that makes money by getting clients to refer new customers to the company. It started with only 5 clients. If each client is required to get 3 new clients every month, how many clients will Globo Inc. have in a year?

Formula: