Math 1 Name_____

Lesson 5 Assignment Exponential Decay

Date_____ Period____

Write an exponential function to model each situation. Then solve it.

1) Each year the local country club sponsors a tennis tournament. Play starts with 128 participants. During each round, half of the players are eliminated (50% rate). How many players remain after 5 rounds?

2) A population of 100 fish in an aquarium are dying at a rate of 3% each month. How many fish will remain after 6 months?

3) An adult takes 400 mg of ibuprofen. Each hour, the amount of ibuprofen in the person's system decreases by about 29%. How much ibuprofen is left after 5 hours?

4) You drink a beverage with 120 mg of caffeine. Each hour, the caffeine in your system decreases by about 12%. How much caffeine will be in your system after 8 hours?

5) Peter bought a house for $225,000 in a declining neighborhood. The value of his house decreases each year by 7%. When Peter sells his house after 9 years, how much is his house worth?

6) The population of a certain animal species decreases at a rate of 3.5% each year. You have counted 80 animals in the habitat you are studying. How many animals will remain after 20 years?

7) A new truck that sells for $29,000 depreciates at a rate of 13% each year. What is the value of the truck after 7 years?

Answers to Lesson 5 Assignment Exponential Decay (ID: 1)

1) 4
2) 83 fish
3) 72.17 mg
4) 43.16 mg
5) $117,092.49
6) 39 animals
7) $10,940.39