**Exponential vs. Linear**

Name:

Unit 8 Day 4

For each situation, fill in the table and determine if the situation represents a linear or exponential growth. Explain your answer each time. If it’s linear, find the slope. If it’s exponential, find the growth or decay factor.

1) You start with $1,000 in your savings account 2) The value of a dollar quadruples each year.

 and deposit $723 per month.

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3) A liter of water evaporates from a full, 4) You have already worked 6 hours this summer.

 25 liter swimming pool every day. You work 4 hours each day.

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5) A pair of rabbits has 1 baby to start with. Each month, 6) You have already worked 6 hours this summer.

 they have 6 times as many rabbits as the month before. Each week, you double the number of hours worked.

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7) A botanist for the Agricultural Extension Service is collecting data to analyze the growth patterns of a new species of geranium. The test plant begins at a height of 7.5 centimeters. He notes that each day the height of the geranium plant increases by two centimeters.

8) A biologist for the Center of Disease Control is collecting data to analyze the growth patterns of a new species of bacteria. She begins with a Petri dish containing one bacterium. She notes that each day the number of bacteria doubles.

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9) Every week, 75% of a radioactive substance 10) A new car worth $20,000 loses 30% of

 remains from the beginning of the week. its value every year.

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11) A bank account starting at $100 gains 3% every year. 12) Every 124 minutes, ½ of a drug dosage remains in

 the body.

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