Name: _____ **Date:** _____

Exponential Growth and Decay Worksheet

1. $y = 1200 \cdot (1 + 0.3)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

2. $y = 55 \cdot (1 - 0.02)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

3. $y = 100 \cdot (1.25)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

4. $y = 5575 \cdot (0.65)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

5. $y = 2000 \cdot (1.05)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

6. $y = 14000 \cdot (0.92)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

7. $y = 2250 \cdot (1 - 0.9)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

8. $y = 10 \cdot (1 + 0.04)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

9. The first year of a charity walk event had an attendance of 500. The attendance y increases by 5% each year.

A. Write an exponential growth function to represent this situation.

B. How many people will attend in the 10th year? Round your answer to the nearest person.

10. The population of a small town was 3600 in 2005. The population increases by 4% annually.

A. Write an exponential growth function to represent this situation.

B. What will the population be in 2025? Round your answer to the nearest person

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11. Your starting salary at a new company is $34,000 and it increase by 2.5% each year.

A. Write an exponential growth function to represent this situation.

B. What will you salary be in 5 years? Round your answer to the nearest dollar.

12. In 2010 an item cost $9.00. The price increase by 1.5% each year.

A. Write an exponential growth function to represent this situation.

B. How much will it cost in 2030? Round your answer to the nearest cent.

13. The yearly profits of a company is $25,000. The profits have been decreasing by 6% per year.

A. Write an exponential decay function to represent this situation.

B. What will be the profits in 8 years? Round your answer to the nearest dollar.

14. You bought $2000 worth of stocks in 2012. The value of the stocks has been decreasing by 10% each year.

A. Write an exponential decay function to represent this situation.

B. What will your stock be worth in 2017? Round your answer to the nearest cent.

15. Your car cost $42,500 when you purchased it in 2015. The value of the car decreases by 15% annually.

A. Write an exponential decay function to represent this situation.

B. How much will your car be worth in 2022? Round your answer to the nearest dollar.

16. A piece of land was purchased for $65,000. The value of the land has slowly been decreasing by 1% annually.

A. Write an exponential decay function to represent this situation.

B. How much will the land be worth in 20 years? Round your answer to the nearest dollar.