

**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

**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.