

## Exponential Growth and Decay

$$\text{Amount}(\text{Time}/\text{Time Unit}) = \text{Amount Start}(\text{Rate of Change})^{(\text{time}/\text{time unit})}$$

A city doubles its size every 16 years. If the population is currently 200,000, what will the population be in 32 years?

Amount Start \_\_\_\_\_

Rate of Change \_\_\_\_\_

Time/Time Unit \_\_\_\_\_

Thanks to its environmental initiatives, Somerville has cut its annual CO<sub>2</sub> emissions by 15%. This year, the town produced 61,000 metric tons of emissions. If the downward trend continues, how much CO<sub>2</sub> will be produced 17 years from now?

Amount Start \_\_\_\_\_

Rate of Change \_\_\_\_\_

Time/Time Unit \_\_\_\_\_

You have 960 grams of a radioactive kind of tin. How much will be left after 40 days if its half-life is 10 days?

Amount Start \_\_\_\_\_

Rate of Change \_\_\_\_\_

Time/Time Unit \_\_\_\_\_

Bella deposited \$90 in a savings account earning 5% interest, compounded annually. To the nearest cent, how much will she have in 2 years?

Amount Start \_\_\_\_\_

Rate of Change \_\_\_\_\_

Time/Time Unit \_\_\_\_\_