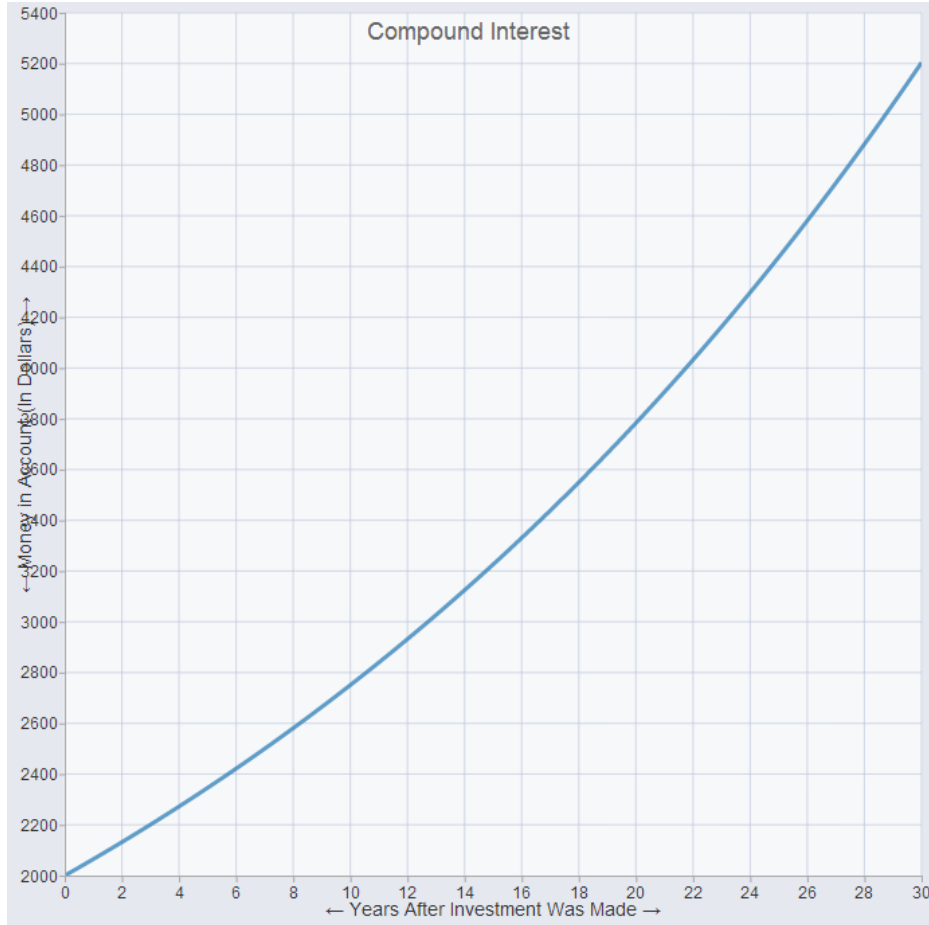


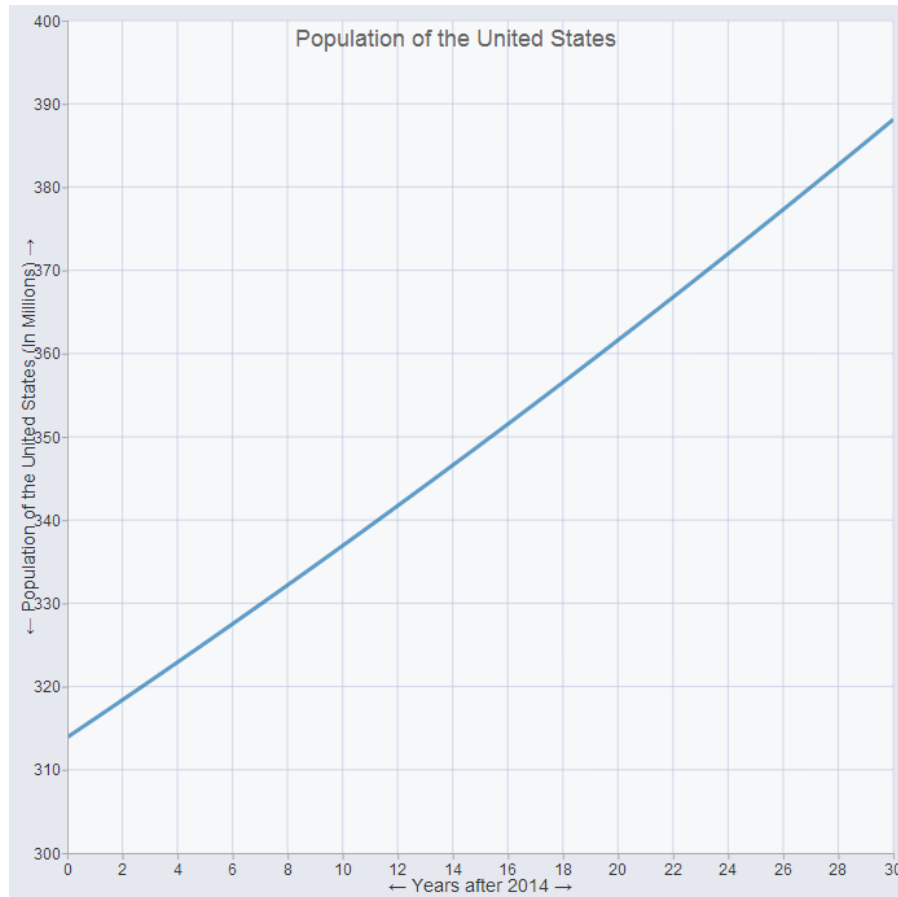
Name _____
Date _____

You invest \$2000 in an account with a 3.2% interest rate that is compounded quarterly. Use this information and the corresponding graph to answer the following questions.



1. Write an equation to model this situation using the formula for compound interest.
2. Approximately how much money will you have after 5 years?
3. Approximately how much time will it take until you have \$3000 in your account?
4. How long will it take the money in your account to double?

The population of the United State in 2014 is about 313.9 million and growing at a rate of about 0.71% per year. Use this information and the corresponding graph to answer the following questions.



- Write an equation to model this situation using the general growth formula.
- Approximately what will the population (in millions) be in 2024?
- Approximately how long will it take the population to reach 350 million?
- Should we use this information to predict the population in 3014? Why or why not?

Answer Key:

1. $A = 2000(1.008)^{4t}$
2. About \$2350
3. Almost 13 years
4. Almost 22 years
5. $A = 313.9(1.0071)^t$
6. About 337 million people
7. A little over 15 years
8. No. This model is based on current population growth rates. Population growth is variable and can often change over time. The year 3014 is too far in the future to make predictions about accurately.