**Notes**

1. When Vail Mountain opened in 1962, a lift ticket cost $5. Since then, prices have approximately doubled every 10 years.
   1. Create a table for this situation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | 1962 | 1972 | 1982 | 1992 | 2002 |
| **Cost in Dollars** |  |  |  |  |  |

* 1. Would linear or exponential growth better model this relationship? Explain.
  2. Define the variables for this situation.
  3. Create a graph that models this situation.



**Review:**

* Definition of the factor *a*:
  1. Do you expect the factor to be greater than 1 or between 0 and 1?
  2. Create an equation to model the cost of a lift ticket as a function of the time in years after 1962. Round the factor to 3 decimal places.

1. The number of kidney stone diagnoses has doubled over the last 16 years. When the study began in 1994, the proportion of kidney stone diagnosis per person was 0.05.
   1. Define the variables of the situation.
   2. Create an exponential function describing this relationship. **Round to 3 decimals.**
2. The concentration in the blood stream of theophylline, a common asthma drug, can be modeled by an exponential model. Let *T* be the concentration of theopyhlline in mg/L and let *h* be the number of hours.
   1. Using the information that the initial concentration is 12 mg/L and 6 hours later, the concentration is 4.2 mg/L, write an exponential function of *T* as a function of *h*. **Round to 3 decimals.**
   2. Evaluate *T(9)* AND interpret this value in the context of the situation.
3. A town’s population increased from 200 to 700 in a 5 year period.
   1. Define the variables.
   2. Write a LINEAR equation to represent the situation.
   3. Write an EXPONENTIAL equation to represent the situation. **Round to 3 decimals.**