## Vocabulary/Definitions

- $\circ$  Function
- $\circ~$  The Rule of Four
- $\circ~$  The Domain of a Function
- $\circ~$  When a Function is Linear
- Difference Quotient
- $\circ~$  The Equation of a Linear Function
- $\circ$  What "y is proportional to x" means
- $\circ~$  How to Recognize Data from an Exponential Function
- $\circ~$  Concave Up
- $\circ~$  Concave Down
- $\circ~$  The Equation of an Exponential Function
- $\circ~$  Half and Doubling Times
- $\circ$  Equation of an Exponential with Continuous Growth (or Decay) rate k

## Understand

1. In 1970, the population of a city was 250,000. In 1980, it was 270,000. If the population grows linearly, what is the slope? What is the meaning of the slope? Write the linear equation giving the population P(t).

2. Suppose that the population of the city in (1) is actually growing exponentially. Assume that t = 0 in 1970, and find the equation for the population. (You will want to find the base and initial population.)