**H.W.1.P.11**

**Evaluating Functions** Name:

**YOU MUST SHOW WORK FOR EACH PROBLEM**

1. The height of a golf ball hit into the air is modeled by the equation $h = -16t^2 + 48t,$ where *h* represents the height, in feet, and *t,* represents the number of seconds that have passed since the ball was hit. What is the height of the ball after 2 seconds?

2. The equation $P = 0.0089t^2 + 1.1149t + 78.4491$ models the United States population, *P*, in millions since 1900. If *t* represents the number of years after 1900, then what is the estimated population in 2025 to the *nearest tenth of a million*?

3. For a recently released movie, the function $y = 119.67(0.61)^x$ models the revenue earned, *y*, in millions of dollars each week, *x*, for several weeks after its release. Based on the equation, how much more money, in millions of dollars, was earned in revenue for week 3 than for week 5?

4. The value, *y*, of a $15,000 investment over *x* years is represented by the equation $y = 15000(1.2)^{\frac{x}{3}}$. What is the profit (interest) on a 6-year investment?

5. Kathy deposits $25 into an investment account with an annual rate of 5%, compounded annually. The amount in her account can be determined by the formula , $A = P(1+R)^t$ where *P* is the amount deposited, *R* is the annual interest rate, and *t* is the number of years the money is invested. If she makes no other deposits or withdrawals, how much money will be in her account at the end of 15 years?