

Algebra 2 Honors
Homework-Word Problems

Name: _____

1. In 2000, the population of California was 29,816,591 and increased yearly by 1.28%. What will the population be in the year 2020?

2. You buy a new computer and accessories for \$1200. The value of the computer decreases by 30% each year. What is the value of the computer after four years?

3. You deposit \$3500 in an account that earns 4.5% annual interest. Find the balance after seven years if the interest is compounded with the given frequency.
 - a. quarterly
 - b. monthly
 - c. continuously

4. You deposit \$1500 in an account that pays 3.125% annual interest compounded continuously. What is the balance after five years?

5. A particular bacteria population is modeled by the following function, $f(t) = 2750(1-0.08)^t$, where t is the time in days that the bacteria to die off. The scientists want to know how long it takes for the population to be under 250. How long will it take?

6. You deposit \$500 in an account that pays 4% annual interest. How long does it take the balance to reach the following amounts?
- \$1000 when interest is compounded quarterly
 - \$1500 when interest is compounded yearly
 - \$2000 when interest is compounded continuously
7. State the domain and range of the function: $y = 3^x - 1$
- Domain: $(-\infty, +\infty)$ Range: $y > 2$
 - Domain: $x \geq 3$ Range: $(-\infty, +\infty)$
 - Domain: $(-\infty, +\infty)$ Range: $y > -1$
 - Domain: $x \geq -1$ Range: $(-\infty, +\infty)$
8. State the domain and range of the function: $y = 4^x + 2$
- Domain: $(-\infty, +\infty)$ Range: $y > 2$
 - Domain: $x \geq 4$ Range: $(-\infty, +\infty)$
 - Domain: $(-\infty, +\infty)$ Range: $y > 6$
 - Domain: $x \geq 2$ Range: $y > 4$
9. State the domain and range of the function: $y = \log_4(x + 5)$
- Domain: $x > -5$ Range: $y \geq -5$
 - Domain: $x > -5$ Range: $y \geq 0$
 - Domain: $(-\infty, +\infty)$ Range: $(-\infty, +\infty)$
 - Domain: $x > -5$ Range: $(-\infty, +\infty)$
10. State the domain and range of the function: $y = \log_7(x - 3)$
- Domain: $x > 3$ Range: $y \geq 3$
 - Domain: $x > 3$ Range: $y \geq 0$
 - Domain: $x > 3$ Range: $(-\infty, +\infty)$
 - Domain: $(-\infty, +\infty)$ Range: $(-\infty, +\infty)$