Chapter 11

Chapter 11 Mid-Chapter Test (Lessons 11-1 and 11-4)

For Exercises 1-3, evaluate each expression.

1. $\left(16^{\frac{1}{2}} + 64^{\frac{1}{3}}\right)^{\frac{1}{3}}$

1. _____

2. $\dfrac{-8^{\frac{1}{3}}}{8}$

2. _____

3. $\sqrt{15} \cdot \sqrt{60}$

3. _____

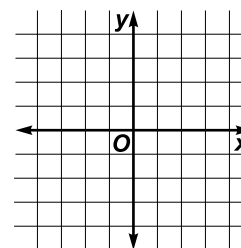**4.** Express $\sqrt[3]{8x^2y^6}$ using rational exponents.

4. _____

5. Evaluate 7^{π} to the nearest thousandth.

5. _____

6. Sketch the graph of $y = 4^{-x}$.

6.

7. The number of seniors at Freedmont High School was 241 in 1993. If the number of seniors increases exponentially at a rate of 1.7% per year, how many seniors will be in the class of 2005?

7. _____

8. Jasmine invests $1500 in an account that earns an interest rate of 11% compounded continuously. Will she have enough money in 4 years to put a $2500 down payment on a new car? Explain.

8. _____

9. A city's population can be modeled by the equation $y = 29{,}760e^{-0.021t}$, where t is the number of years since 1986. Find the projected population in 2012.

9. _____

10. Evaluate $\log_4 \dfrac{1}{64}$.

10. _____

11. Solve $\log_3 x + \log_3 (x - 6) = \log_3 16$.

11. _____

12. Sketch the graph of $y \leq \log_2 (x - 1)$.

12.