8.1 and 8.2

1. Graph: $f(x) = 4 * \frac{2}{3}^{x-2} + 6$
2. Graph: $f(x) = \frac{2}{3} * 2^{x+4} - 3$
3. The population of a murder of crows that lives in a field is increasing steadily at a rate of 2.5%. In 2015, the population is $2,500$. Write a function represented the population rate over time. What will the population of this murder of crows be in 2030?
4. The number of trees in a forest is steadily decreasing at a rate of 4%. In 2015, there were $8,000$ trees in the forest. Write a function representing the number of trees in the forest over time. How many trees will be left in the forest in 2025?
5. You are given $\$8,000$ to invest at 5% for 6 years. Find your balance if your money is compounded annually and quarterly.
6. You win $\$100,000$ and decide to invest it at 3% for 3 years. Find your balance if your winnings are compounded annually and quarterly.

8.3

1. You invest $\$32,000.00$ at an interest rate of 8% each year. What will the value of the truck be in 4 years if it is compounded:
   (a) annually
   (b) weekly
   (c) daily
2. If you invest $\$30,000$ dollars at an interest rate of 3%, what will your balance be after 7 years of compounding continuously?
3. Graph (make sure to include a baseline): $f(x) = 4e^{0.5(x-6)}$

8.4

1. Evaluate the expression without using a calculator: $log_{\frac{1}{5}} 25$
2. Find the inverse: $y = -log_{17} x$
3. Graph the function: $y = log_6(x + 8) + 7$

8.5 and 8.6

1. Expand: $\log 6x^3 \frac{10}{3}$
2. Condense $\frac{1}{4} \ln 81 + (2 \ln 6 - \frac{1}{2} \ln 4)$
3. Evaluate $\log_8 12$ with the change of base formula.
4. Solve $8^{5x} = 16^{3x+4}$. Check for extraneous solutions.
5. Solve $\log(5 - 3x) = \log(4x - 9)$. Check for extraneous solutions.

8.7