**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Exponential Functions**

**Evaluate each function for the given values of the domain.**

1. ; domain: {1, 3, 4}
2. ; domain {1, 3, 5}
3. domain {1, 2, 3}
4. ; domain {0, -2, -1/2}

**Write and evaluate the function.**

1. Your science class is collecting cans. You start with 150 cans. Your collection triples every week. How many cans will you have collected after 7 weeks?
2. A population of 2500 triples in size every 10 years. What will the population be in 30 years?
3. Your parents invested $2000 in college fund for you when you were 4 year old. It has doubled in value every 4 year. If you are now 16, how much is in your college fund?
4. A bacteria culture doubles in size every 8 hours. The culture starts with 150 cells. How many will there be after 24 hours? How about after 72 hours?
5. The price of a bicycle is $100. It increases 8% per year. What will the price be at the end of 5 years?
6. The population of a town in 2000 was 20,000. Since then, the population decreased 12.5% each year.
   1. Write the equation: Clean it Up:
   2. Find the population in the year 2012.
   3. Find the population in 2015.
7. Suppose you deposit $1500 in a savings account that pays interest at an annual rate of 6%. No money is added or withdrawn from the account.
   1. Write an equation: Clean It Up:
   2. How much will be in the account after 5 years?
   3. How much will be in the account after 20 years?

**Write an exponential function to model each situation. Find each amount after specified time.**

1. A population of 1,236,000 grows 1.3% per year. Find the population in 10 years.
2. A population of 752,000 decreases 1.4% per year. Find the population in 18 years.
3. A new car that sells for $25,000 depreciates 15% each year. Find the price in 4 years.