

Name: \_\_\_\_\_

Period: \_\_\_\_\_

**Chapter 6 Test Review****Section 6.1 Practice:**

In Exercises 1–6, evaluate the expression.

1.  $(-3)^0$

2.  $7^0$

3.  $3^{-5}$

4.  $(-5)^{-3}$

5.  $\frac{3^{-2}}{9^0}$

6.  $\frac{6^{-1}}{-5^0}$

In Exercises 7–18, simplify the expression. Write your answer using only positive exponents.

7.  $x^{-6}$

8.  $z^0$

9.  $7x^{-4}y^0$

10.  $12f^0g^{-9}$

11.  $\frac{3^{-2}a^0}{b^{-2}}$

12.  $\left(\frac{1}{2c^2}\right)^{-4}$

**Section 6.2 Practice:**

In Exercises 1 and 3, rewrite the expression in rational exponent form AND evaluate it.

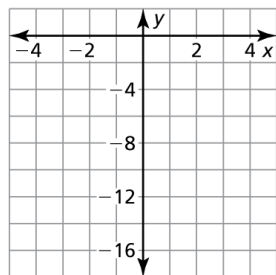
1.  $25^{3/2}$

2.  $\sqrt[4]{13}$

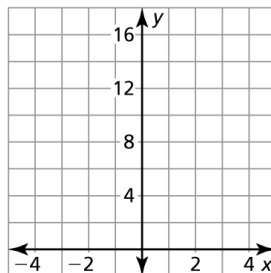
3.  $\sqrt[3]{-125}$

**Section 6.3 Practice:**In exercises 1 and 2 graph the function and describe the domain and range, and evaluate each function at  $f(0)$  and  $f(5)$ 

1.  $f(x) = -3(2)^x$



2.  $f(x) = 2(.5)^x$



Domain:

Domain:

Range:

Range:

$f(0)=$  \_\_\_\_\_  $f(5)=$  \_\_\_\_\_

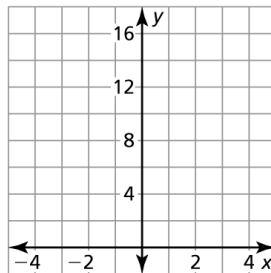
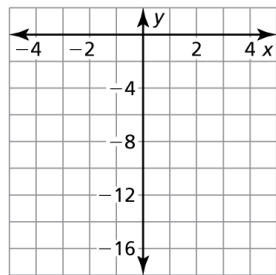
$f(0)=$  \_\_\_\_\_  $f(5)=$  \_\_\_\_\_

Name: \_\_\_\_\_

Period: \_\_\_\_\_

3.  $f(x) = -2(4)^x$

4.  $f(x) = 3(25)^x$



Domain:

Domain:

Range:

Range:

$f(0) = \underline{\hspace{2cm}}$   $f(5) = \underline{\hspace{2cm}}$

$f(0) = \underline{\hspace{2cm}}$   $f(5) = \underline{\hspace{2cm}}$

### 6.5 Practice: Solving variables in the exponent

1.  $(\frac{1}{3})^x = 27$

2.  $8^{5x} = 4^{4x+7}$

3.  $3^{8x} = 3^{5x-6}$

4.  $3^{2x} = 3^4$

5.  $2^{x-1} = 4$

6.  $5^{3x-4} = 25$

### 6.4 Practice: Exponential growth, decay and compound interest

Determine if each table represents an exponential growth function, exponential decay function, or neither.

1.

<b>x</b>	0	1	2	3
<b>y</b>	200	100	50	25

2.

<b>x</b>	0	1	2	3
<b>y</b>	4	12	36	108

3.

<b>x</b>	<b>y</b>
0	3
1	5
2	7
3	9

4.

<b>x</b>	-1	0	1	2	3
<b>y</b>	16	4	1	1/4	1/16

Name: \_\_\_\_\_

Period: \_\_\_\_\_

5. A college's tuition of \$135 per credit hour increases by 5% each year.
- Write a function that represents the cost of a credit hour after  $t$  years.
  - How much will a credit hour cost 5 years from now?

6. You buy an iPhone for \$450. The value of the iPhone decreases 20% each year.
- Write a function to represent how much your iPhone is worth in dollars after  $t$  years.
  - What is the value of your iPhone after 2 years?
  - What is the value of your iPhone after 6 years?

- When will the value of your iPhone be worth zero?

7. There are currently 2 bunnies that live in your garden. The population of bunnies triples every year.
- Complete the table to that represents the number of bunnies living in your yard.

$x$	0	1	2	3
$y$				

- Write the equation that can be used to calculate the number of bunnies after  $t$  years.

- How many bunnies will be in your yard after 5 years?

8. You invest \$10,000 in a CD (certificate of deposit, similar to a long-term savings account) that is increasing 2.2% every year.

- Write a function that represents the amount of money in your CD ( $y$ ) after  $t$  years.

- How much money will be in the account after 3 years?

- When will you double your money?