

**Practice – Equations of Exponential Functions**

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Write the function rule for each, then use your calculator to answer the questions.**

1.

<b>x</b>	-2	-1	0	1	2
<b>y</b>	5	25	125	625	3125

Function Rule: \_\_\_\_\_

What is the value of  $y$  when  $x$  is -3?

What is the value of  $x$  when  $y$  is 390,625?

2.

<b>x</b>	-3	-2	-1	0	1
<b>y</b>	32	16	8	4	2

Function Rule: \_\_\_\_\_

What is the value of  $y$  when  $x$  is 5?

What is the value of  $x$  when  $y$  is 16,384?

3.

<b>x</b>	-2	-1	0	1	2
<b>y</b>	$\frac{1}{81}$	$\frac{1}{27}$	$\frac{1}{9}$	$\frac{1}{3}$	1

Function Rule: \_\_\_\_\_

What is the value of  $y$  when  $x$  is 6?

What is the value of  $x$  when  $y$  is 6561?

PAP Algebra I - Unit 9: Writing Exponential Functions

4. Use the data in the table to describe how the ladybug population is changing. Write a function that models the data. Use your function to predict the ladybug population after one year.

Ladybug Population	
Time (mo)	Ladybugs
0	10
1	30
2	90
3	270

How is the data changing:

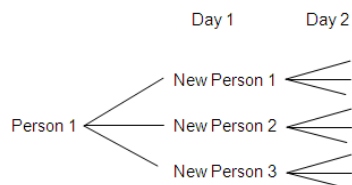
Function rule: \_\_\_\_\_

Number of lady bugs after one year: \_\_\_\_\_

5. Haley Joel Osment, in *Pay It Forward*, demonstrated the idea that on the first day he does a good deed for three different people. Then on the second day, those three people will each perform good deeds for three different people. And the process continues.

A. Using this idea and the tree diagram, complete the table.

Day	# of Deeds
1	3
2	
3	
4	
5	



B. Write the function rule that the data indicates.

C. How many good deeds were done on the 20<sup>th</sup> day?