

6.2.D2 ~ Comparing Exponential & Linear Functions Past due on: \_\_\_\_\_ Period: \_\_\_\_\_

Examine the output pattern to determine which of the following data sets are linear and which are exponential. For the linear set, write a linear function of the form  $y = b + mx$ ; for the exponential set, write an exponential equation of the form  $y = a(b)^x$ .

1. 

$x$	-2	-1	0	1	2	3	4
$y$	$\frac{1}{9}$	$\frac{1}{3}$	1	3	9	27	81

2. 

$x$	-2	-1	0	1	2	3	4
$y$	2	2.5	3	3.5	4	4.5	5

3. 

$x$	-2	-1	0	1	2	3	4
$y$	0.75	1.5	3	6	12	24	48

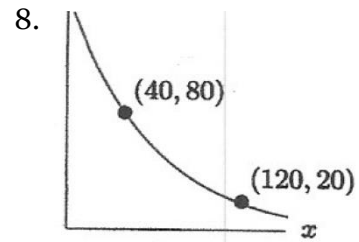
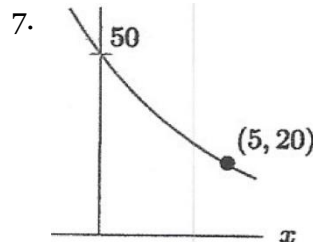
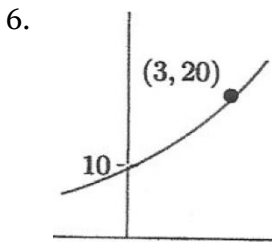
4. 

$x$	-2	-1	0	1	2	3	4
$y$	0.50	2	8	32	128	512	2048

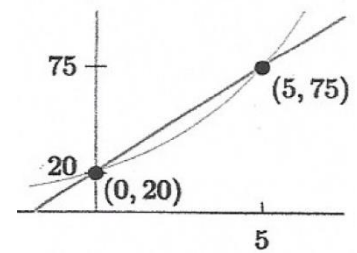
5. 

$x$	-2	-1	0	1	2	3	4
$y$	6.25	2.5	1	0.4	0.16	0.064	0.0256

Find a formula for the exponential function of the form  $y = a(b)^x$ . If necessary, round  $a$  to 2 decimal places and  $b$  to 3 decimal places.



9. Write a linear function, for  $f(x)$ , of the form  $y = mx + b$  AND write an exponential function, for  $g(x)$ , of the form  $y = a(b)^x$ . If necessary, round  $m$ ,  $b$  &  $a$  to 2 decimal places; round  $b$  to 3 decimal places.



10. Write a linear function, for  $f(x)$ , of the form  $y = mx + b$  AND write an exponential function, for  $g(x)$ , of the form  $y = a(b)^x$ . If necessary, round  $m$ ,  $b$  &  $a$  to 2 decimal places; round  $b$  to 3 decimal places.

