

## Ready, Set, Go!



Topic: Comparing arithmetic and geometric sequences.

## Ready

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The first and 5<sup>th</sup> terms of a sequence are given. Fill in the missing numbers for an arithmetic sequence. Then fill in the numbers for a geometric sequence.

1.

<b>arithmetic</b>	4				<b>324</b>
<b>geometric</b>	4				<b>324</b>

2.

<b>arithmetic</b>	3				<b>48</b>
<b>geometric</b>	3				<b>48</b>

3.

<b>arithmetic</b>	-6250				<b>-10</b>
<b>geometric</b>	-6250				<b>-10</b>

4.

<b>arithmetic</b>	-12				<b>-0.75</b>
<b>geometric</b>	-12				<b>-0.75</b>

5.

<b>arithmetic</b>	-1377				<b>-17</b>
<b>geometric</b>	-1377				<b>-17</b>

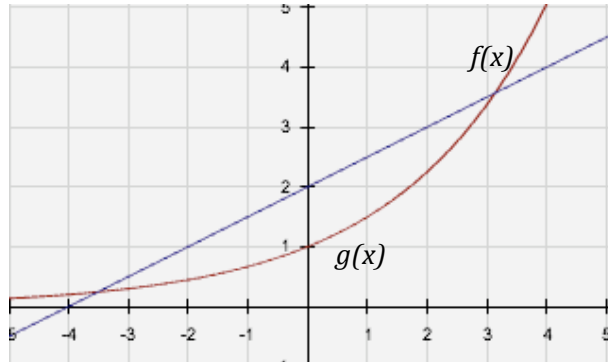


## Set

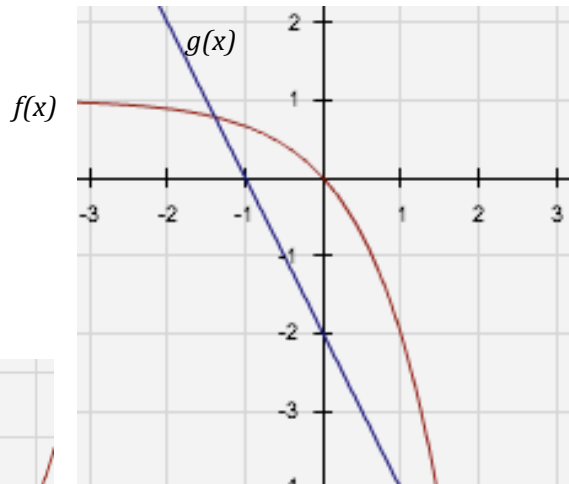
Topic: comparing the rates of change of linear and exponential functions.

Compare the rates of change of each pair of functions by identifying the interval where it appears that  $f(x)$  is changing faster and the interval where it appears that  $g(x)$  is changing faster. Verify your conclusions by making a table of values for each equation and exploring the rates of change in your tables.

6.  $f(x) = (1.5)^x$   
 $g(x) = \frac{1}{2}x + 2$



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



8.  $f(x) = 2^x$   
 $g(x) = 8x$



Topic: Writing explicit equations for linear and exponential models.

### Go

Write the explicit equation for the tables and graphs below.

9.

$x$	$f(x)$
2	-4
3	-11
4	-18
5	-25

10.

$x$	$f(x)$
-1	$\frac{2}{5}$
0	2
1	10
2	50

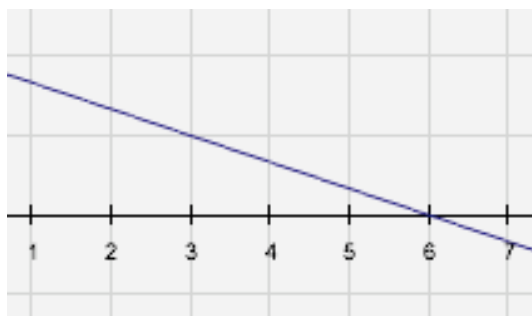
11.

$x$	$f(x)$
2	-24
3	-48
4	-96
5	-192

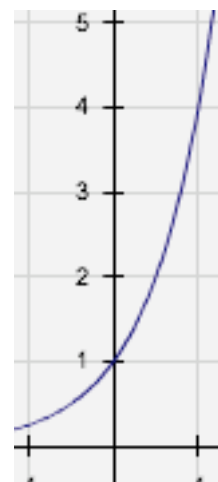
12.

$x$	$f(x)$
-4	81
-3	27
-2	9
-1	3

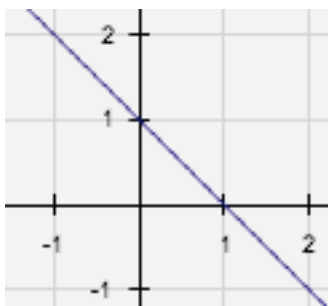
13.



14.



15.



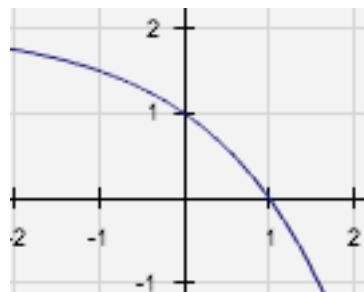
16.



17.



18.



Need Help? Check out these related videos:

<http://www.khanacademy.org/math/algebra/solving-linear-equations/v/equations-of-sequence-patterns>

<http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/geometric-sequences--introduction>

<http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/exponential-growth-functions>

<http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/exponential-decay-functions?v=AXAMVxaxjDg>

