

Name

7.5 Write and Graph Exponential Decay Functions

Alg I

I can write and graph exponential decay functions.

Exponential Decay: An exponential function where b is a fraction

Example 1:

x	-1	0	1	2
y	5	1	$\frac{1}{5}$	$\frac{1}{25}$

(Handwritten notes: $\times \frac{1}{5}$, $\times \frac{1}{5}$, $\times \frac{1}{5}$ with arrows pointing from y=1 to y=5 and y=1 to y=1/5)

yes; $a=1$ $b=\frac{1}{5}$

$$y = \left(\frac{1}{5}\right)^x$$

Ch. 7 Quiz

Example 2 & 3:

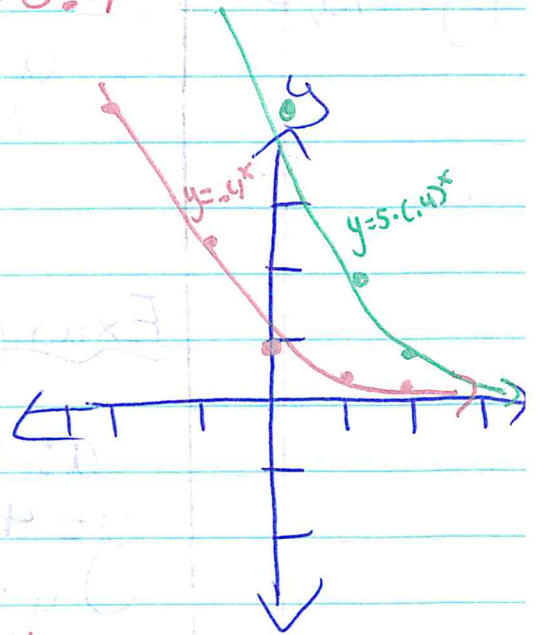
2) $y = (0.4)^x$ $a=1$ $b=0.4$

x	-2	-1	0	1	2
y	6.25	2.5	1	0.4	0.16

3) $y = 5 \cdot (0.4)^x$

x	-2	-1	0	1	2
y	31.25	12.5	5	2	0.8

$a=5$
 $b=0.4$



Vertical Stretch

Name

Alg I

Write and Graph Exponential Decay Functions

I can write
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exponential
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Example 4:

x	0	1
y	10	8

\downarrow
 $\times (.8)$

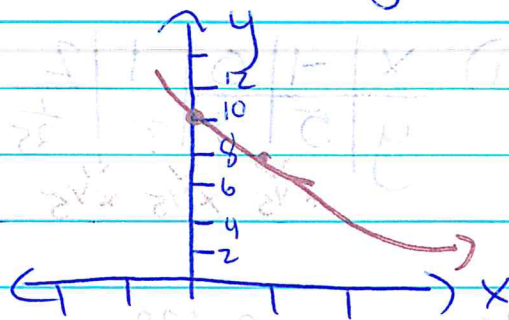
$a = 10$

$b = .8$

Exponential Decay

$y = 10 \cdot (.8)^x$

Ch. 7 Quiz



* Complete
Skills Practice,
pg. 473, #

Exponential Decay Model:

$$y = a(1-r)^t$$

a : initial amount

r : decay Rate

t : Time Period

Example 5:

$a = 41$

$r = 0.005$

$t = 1963 \rightarrow 2010; 47$

$y = 41(1 - 0.005)^{47}$

$y = 41(0.995)^{47}$

$y = 41(.79)$

$y = 32.4$ million