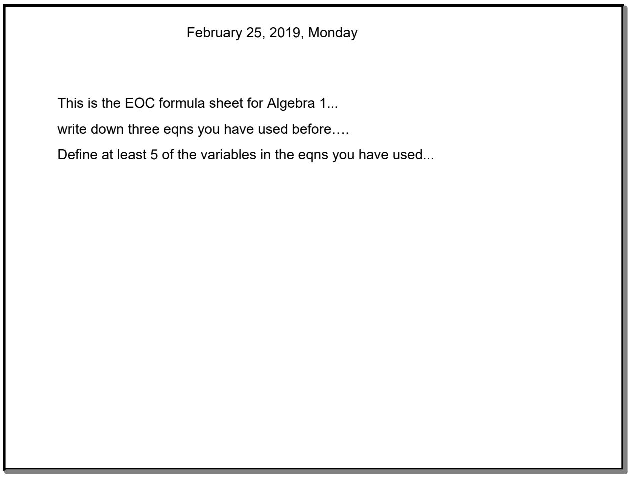
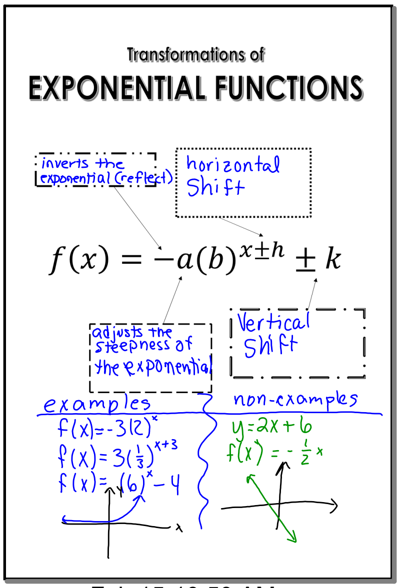
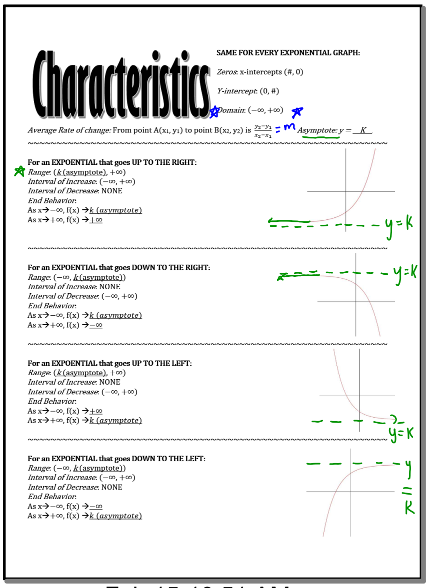


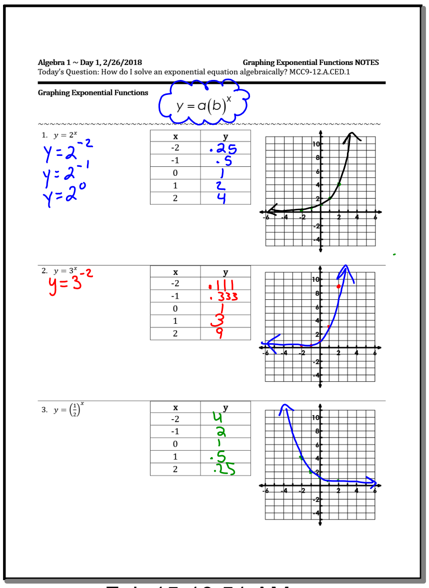
Feb 15-10:49 AM



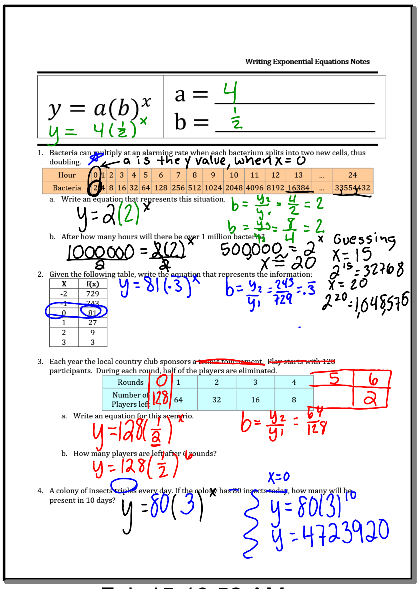
Feb 15-10:50 AM



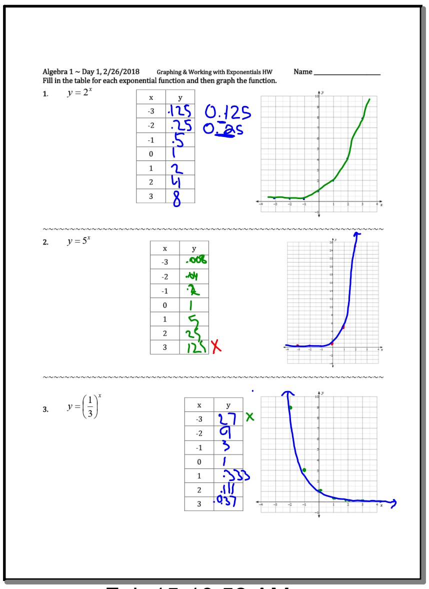
Feb 15-10:51 AM



Feb 15-10:51 AM



Feb 15-10:52 AM



Feb 15-10:52 AM

Writing Exponential Models HW

Exponential Model: $y = a(b)^x$ — a = start value; b = what you multiply or divide by (rate of change)

B → Y < F < F, F; F < F, F

1. Your brother tells you a secret. You see no harm in telling two friends. After this second "passing" of the secret, 4 people now know the secret (your brother, you and two friends). If each of these friends now tells two new people, after the third "passing" of the secret, eight people will know. Write an equation to express the "passing" of the secret. If this pattern of spreading the secret continues, how many people will know the secret after 10 such "passings"?

$y = 1(2)^x$ { $y = 1(2)^{10}$, $y = 1024$

2. Alexis was working in the biology lab on her cell project. She started her experiment with 500,000 cells. Every day, the cells die by a third. Write an equation to represent how many cells would be left after each day. How many days will Alexis have until there are less than 100 cells left?

Instragram $y = 1(200)^x$

$y = 1(200)^{10} = 1.024e^{23} = 102,400,000,000,000,000,000,000$

3. The following table represents how the amount of caffeine in your system each hour after drinking a grande coffee.

a. Write an equation based on the information:

b. How many hours would it take to have less than 1mg of caffeine left in your system?

x	c(x)
0	330
1	165
2	82.5
3	41.25
4	20.625

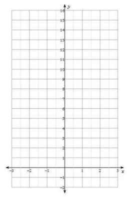
4. Sally has a leaking faucet in her bathroom. When she first noticed the leak, there was a puddle that was 2 inches in diameter. Each hour, the diameter will triple in size. If Sally doesn't do anything to stop the leak, how large will the puddle be after 10 hours?

Feb 15-10:52 AM

Graphing/Writing Exponential Equations TOTD (2/26) Name ____________

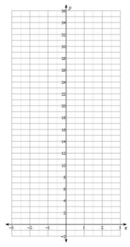
Graph the given exponential functions.

$y = 4^x$



x	f(x)
−3	
−2	
−1	
0	
1	
2	
3	

$y = \left(\frac{1}{6}\right)^x$



x	f(x)
−3	
−2	
−1	
0	
1	
2	
3	

Given the table below, write the equation that represents the information:

x	−2	−1	0	1	2
f(x)	1296	216	36	6	1

A field of flowers is beginning to grow near your house. At first, there were 12 flowers but you notice that the flowers are doubling every day.

a. Write an equation to represent this situation.

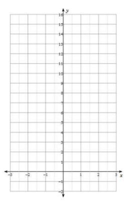
b. How many flowers will there be after 15 days?

Feb 15-10:53 AM

Graphing/Writing Exponential Equations TOTD (2/26) Name ____________

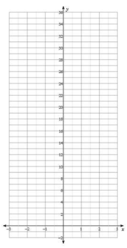
Graph the given exponential functions.

$y = \left(\frac{1}{4}\right)^x$



x	f(x)
−3	
−2	
−1	
0	
1	
2	
3	

$y = 6^x$



x	f(x)
−3	
−2	
−1	
0	
1	
2	
3	

Given the table below, write the equation that represents the information:

x	−2	−1	0	1	2
f(x)	1	6	36	216	1296

A field of flowers is beginning to grow near your house. At first, there were 5 flowers but you notice that the flowers are doubling every day.

a. Write an equation to represent this situation.

b. How many flowers will there be after 15 days?

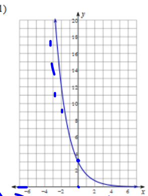
Feb 15-10:53 AM

February 26, 2019, Tuesday

State 2 characteristics of each exponential graph.

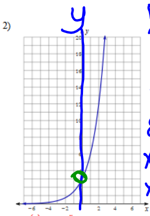
characteristics: Domain xvalue; Range yvalues; x-intercept; y-intercept; End behavior: $x \to \infty, f(x) \to$ ___; $x \to -\infty, f(x) \to$ ___; increase or decreasing

1) $f(x) = 3 \cdot \left(\frac{1}{2}\right)^x$



1) Decreasing
2) Domain: $\mathbb{R}$

2) $f(x) = 3 \cdot 2^x$



1) y-intercept = 3
2) increasing

Feb 15-10:53 AM

Characteristics Notes EXAMPLES

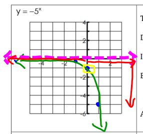
$f(x) = -a(b)^{x \pm h} \pm k$ n place from the parent function of $f(x) = 2^x$.

inverts the exponential (reflect); horizontal shift; adjusts the steepness of the exponential; vertical shift; right 1; up 4

b) $f(x) = -\frac{1}{3}(2)^{x+2} - 3$ — reflection, left 2, down 3

d) $f(x) = 3 + 2^x$ — $f(x) = 2^x + 3$, up 3

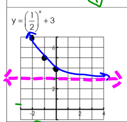
$y = -5^x$



Transformations: Reflection
Domain $\mathbb{R}$ or $(-\infty, \infty)$ Range $(-\infty, 0)$ Asymptote $y = 0$ OR x-axis
Interval Decreasing X-intercept NONE Y-intercept −1 or (0, −1)
End Behavior
$x \to +\infty, f(x) \to -\infty$
$x \to -\infty, f(x) \to 0$
Average Rate of change [0, 1]: $(0, -1), (1, -5)$ $m = \frac{-5 - -1}{1 - 0} = -4$

X	Y
−1	−.2
0	−1
1	−5

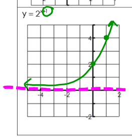
$y = \left(\frac{1}{2}\right)^x + 3$



Transformations: up 3
Domain $\mathbb{R}$ Range $(3, \infty)$ Asymptote $y = 3$
Interval Decr X-intercept NONE Y-intercept 4
End Behavior
$x \to +\infty, f(x) \to 3$
$x \to -\infty, f(x) \to \infty$
Average Rate of change [1, 2]: $(1, \frac{7}{2}), (2, \frac{13}{4})$ $m = \frac{\frac{13}{4} - \frac{7}{2}}{2 - 1} = -0.25$

X	Y
−2	7
−1	5
0	4

$y = 2^{x+1}$



Transformations: left 1
Domain $\mathbb{R}$ Range $(0, \infty)$ Asymptote $y = 0$
Interval Incr X-intercept NONE Y-intercept 2
End Behavior
$x \to +\infty, f(x) \to \infty$
$x \to -\infty, f(x) \to 0$
Average Rate of change [0, 2]: $(0, 2)\ (2, 8)$ $m = \frac{8 - 2}{2 - 0} = \frac{6}{2} = 3$

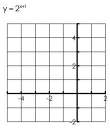
Feb 15-10:54 AM

Algebra 1 ~ Day 2, 2/27/2018 Transformations & Graphing Exponentials HW Name ____________

Give the transformations that have taken place from the parent function of $f(x) = 2^x$.

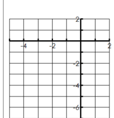
1. $f(x) = 2^{x+3} - 5$ 2. $f(x) = 2^{x-4}$ 3. $f(x) = -2^x - 1$

$y = 2^{x+1}$



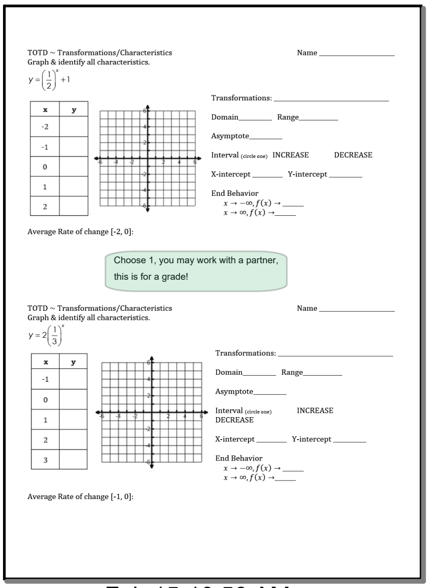
Transformations: ____________
State 3 points on Graph____________
Domain________ Range________
Asymptote________ Interval ________
X-intercept ________ Y-intercept ________
End Behavior
$x \to -\infty, f(x) \to$ ______
$x \to -\infty, f(x) \to$ ______
Average Rate of change [−2, 0]:

$y = -3^{x+1} - 2$



Transformations: ____________
State 3 points on Graph____________
Domain________ Range________
Asymptote________ Interval ________
X-intercept ________ Y-intercept ________
End Behavior
$x \to -\infty, f(x) \to$ ______
$x \to -\infty, f(x) \to$ ______
Average Rate of change [−2, 0]:

Feb 15-10:56 AM


TOTD ~ Transformations/Characteristics Name ______
Graph & identify all characteristics.
$y = \left(\frac{1}{2}\right)^x + 1$

x	y
-2	
-1	
0	
1	
2	

Transformations: ______
Domain ______ Range ______
Asymptote ______
Interval (circle one) INCREASE DECREASE
X-intercept ______ Y-intercept ______
End Behavior
$x \to -\infty, f(x) \to$ ____
$x \to \infty, f(x) \to$ ____
Average Rate of change [-2, 0]:

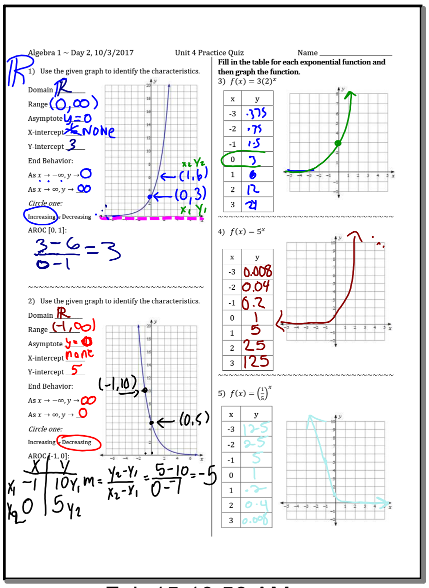
Choose 1, you may work with a partner, this is for a grade!

TOTD ~ Transformations/Characteristics Name ______
Graph & identify all characteristics.
$y = 2\left(\frac{1}{3}\right)^x$

x	y
-1	
0	
1	
2	
3	

Transformations: ______
Domain ______ Range ______
Asymptote ______
Interval (circle one) DECREASE INCREASE
X-intercept ______ Y-intercept ______
End Behavior
$x \to -\infty, f(x) \to$ ____
$x \to \infty, f(x) \to$ ____
Average Rate of change [-1, 0]:

Feb 15-10:56 AM


Algebra 1 ~ Day 2, 10/3/2017 Unit 4 Practice Quiz Name ______
1) Use the given graph to identify the characteristics.
Domain ℝ
Range (0, ∞)
Asymptote y = 0
X-intercept None
Y-intercept 3
End Behavior:
As $x \to -\infty, y \to 0$
As $x \to \infty, y \to \infty$
Circle one: Increasing Decreasing
AROC [0, 1]: $\frac{3-6}{0-1} = 3$
(1, 6) (0, 3)

2) Use the given graph to identify the characteristics.
Domain ℝ
Range (-1, ∞)
Asymptote y = 0
X-intercept none
Y-intercept 5
End Behavior:
As $x \to -\infty, y \to \infty$
As $x \to \infty, y \to 0$
Circle one: Increasing Decreasing
AROC [-1, 0]:
(-1, 10) (0, 5)

x	y
-1	10
0	5

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5-10}{0-1} = -5$

Fill in the table for each exponential function and then graph the function.
3) $f(x) = 3(2)^x$

x	y
-3	.375
-2	.75
-1	1.5
0	3
1	6
2	12
3	24

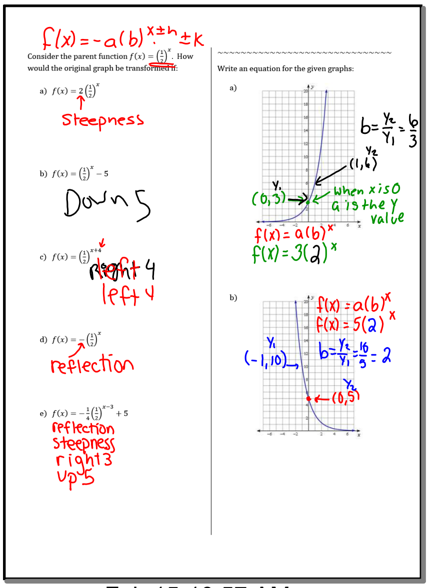
4) $f(x) = 5^x$

x	y
-3	0.008
-2	0.04
-1	0.2
0	1
1	5
2	25
3	125

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

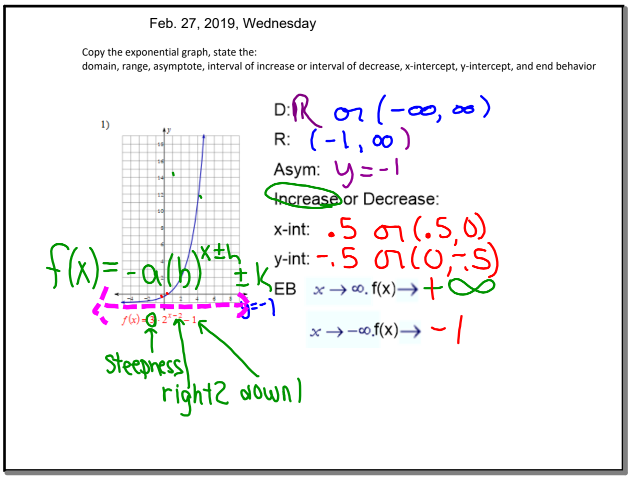
x	y
-3	125
-2	25
-1	5
0	1
1	.2
2	0.04
3	0.008

Feb 15-10:56 AM

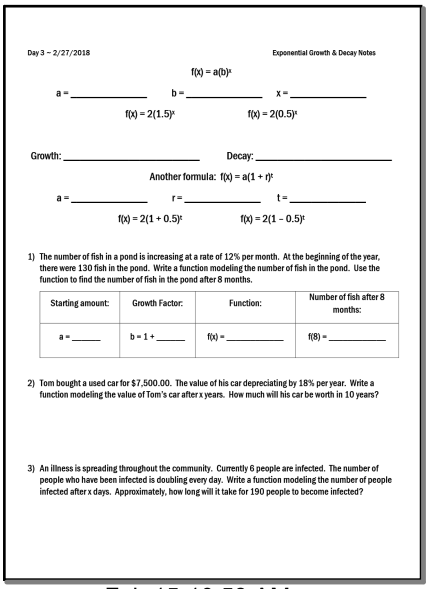

$f(x) = -a(b)^{x \pm h} \pm k$
Consider the parent function $f(x) = \left(\frac{1}{2}\right)^x$. How would the original graph be transformed if:
a) $f(x) = 2\left(\frac{1}{2}\right)^x$ Steepness
b) $f(x) = \left(\frac{1}{2}\right)^x - 5$ Down 5
c) $f(x) = \left(\frac{1}{2}\right)^{x+4}$ left 4
d) $f(x) = -\left(\frac{1}{2}\right)^x$ reflection
e) $f(x) = -\frac{1}{4}\left(\frac{1}{2}\right)^{x-3} + 5$ reflection, steepness, right 3, up 5

Write an equation for the given graphs:
a) $b = \frac{y_2}{y_1} = \frac{6}{3}$ (1, 6) (0, 3) when x is 0, a is the y value
$f(x) = a(b)^x$
$f(x) = 3(2)^x$
b) $f(x) = a(b)^x$
$f(x) = 5(2)^x$
(-1, 10) (0, 5)
$b = \frac{y_2}{y_1} = \frac{10}{5} = 2$

Feb 15-10:57 AM


Feb. 27, 2019, Wednesday
Copy the exponential graph, state the:
domain, range, asymptote, interval of increase or interval of decrease, x-intercept, y-intercept, and end behavior
1)
D: ℝ or (−∞, ∞)
R: (−1, ∞)
Asym: y = −1
Increase or Decrease:
x-int: .5 or (.5, 0)
y-int: −.5 or (0, −.5)
EB $x \to \infty$, f(x) → +∞
$x \to -\infty$, f(x) → −1
$f(x) = -a(b)^{x \pm h} \pm k$
$f(x) = 3 \cdot 2^{x-2} - 1$
Steepness
right 2 down 1

Feb 15-10:57 AM


Day 3 ~ 2/27/2018 Exponential Growth & Decay Notes
$f(x) = a(b)^x$
a = ______ b = ______ x = ______
$f(x) = 2(1.5)^x$ $f(x) = 2(0.5)^x$
Growth: ______ Decay: ______
Another formula: $f(x) = a(1 + r)^t$
a = ______ r = ______ t = ______
$f(x) = 2(1 + 0.5)^t$ $f(x) = 2(1 - 0.5)^t$

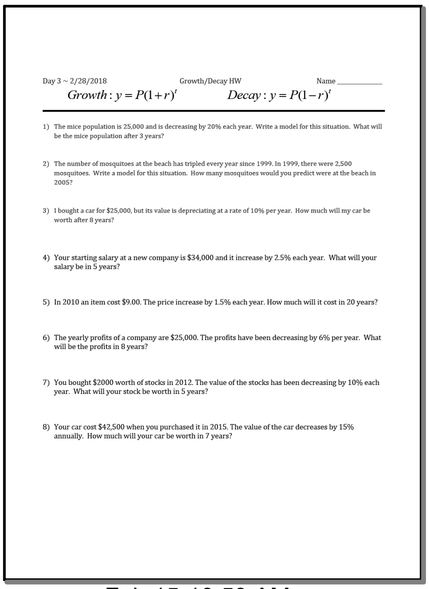
1) The number of fish in a pond is increasing at a rate of 12% per month. At the beginning of the year, there were 130 fish in the pond. Write a function modeling the number of fish in the pond. Use the function to find the number of fish in the pond after 8 months.

Starting amount:	Growth Factor:	Function:	Number of fish after 8 months:
a = ____	b = 1 + ____	f(x) = ______	f(8) = ______

2) Tom bought a used car for $7,500.00. The value of his car depreciating by 18% per year. Write a function modeling the value of Tom's car after x years. How much will his car be worth in 10 years?

3) An illness is spreading throughout the community. Currently 6 people are infected. The number of people who have been infected is doubling every day. Write a function modeling the number of people infected after x days. Approximately, how long will it take for 190 people to become infected?

Feb 15-10:58 AM


Day 3 ~ 2/28/2018 Growth/Decay HW Name ______
Growth: $y = P(1+r)^t$ Decay: $y = P(1-r)^t$

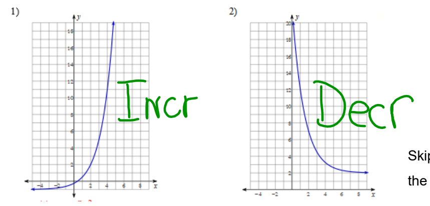
1) The mice population is 25,000 and is decreasing by 20% each year. Write a model for this situation. What will be the mice population after 3 years?
2) The number of mosquitoes at the beach has tripled every year since 1999. In 1999, there were 2,500 mosquitoes. Write a model for this situation. How many mosquitoes would you predict were at the beach in 2005?
3) I bought a car for $25,000, but its value is depreciating at a rate of 10% per year. How much will my car be worth after 8 years?
4) Your starting salary at a new company is $34,000 and it increase by 2.5% each year. What will your salary be in 5 years?
5) In 2010 an item cost $9.00. The price increase by 1.5% each year. How much will it cost in 20 years?
6) The yearly profits of a company are $25,000. The profits have been decreasing by 6% per year. What will be the profits in 8 years?
7) You bought $2000 worth of stocks in 2012. The value of the stocks has been decreasing by 10% each year. What will your stock be worth in 5 years?
8) Your car cost $42,500 when you purchased it in 2015. The value of the car decreases by 15% annually. How much will your car be worth in 7 years?

Feb 15-10:59 AM

Feb. 28, 2019, Thursday

Are the following exponential graphs growth (increasing) or decay (decreasing)?

~~The the exponential growth or decay?~~



3) $y = 4 \cdot 2^x$ Incr

4) $y = 4 \cdot \left(\frac{1}{2}\right)^x$ Decr

Skip 3, 5, & 6 on the back!

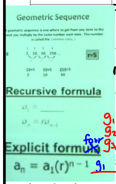
...quiz

Feb 15-10:59 AM

Day 4 ~ Geometric Sequences Notes

Geometric Recursive Formula: Geometric Explicit Formula:

	Common ratio	Recursive Formula	Explicit Formula
1, 2, 4, 8, 16, ...	$\frac{2}{1}=2$, $\frac{8}{4}=2$, $\frac{4}{2}=2$, $\frac{16}{8}=2$, $r=2$	$a_1 = 1$, $a_n = 2a_{n-1}$	$a_n = 1(2)^{n-1}$
10, −2, $\frac{2}{5}$, $-\frac{2}{25}$, ...	$\frac{-2}{10} = -\frac{1}{5}$, $\frac{2/5}{-2} = -\frac{1}{5}$	$a_1 = 10$, $a_n = -\frac{1}{5}a_{n-1}$	$a_n = 10\left(-\frac{1}{5}\right)^{n-1}$
	$r = \frac{15}{5} = 3$	$a_1 = 5$, $a_n = 5a_{n-1}$	$a_n = 5(3)^{n-1}$
	$r = \frac{80}{320} = \frac{1}{4}$	$a_1 = 320$, $a_n = \frac{1}{4}a_{n-1}$	$a_n = 320\left(\frac{1}{4}\right)^{n-1}$



...of the geometric sequence defined as follows:

$g_1 = -1(3)^{1-1} = -1$ $g_4 = -1(3)^{4-1} = -27$
$g_2 = -1(3)^{2-1} = -3$ $g_5 = -1(3)^{5-1} = -81$
$g_3 = -1(3)^{3-1} = -9$

...ns of the geometric sequence defined as follows:

216

$g_2 = g_{2-1} \cdot \frac{1}{4}$, $g_2 = g_1 \cdot \frac{1}{4}$, $g_2 = 216 \cdot \frac{1}{4}$, $g_2 = 54$
$g_3 = g_{3-1} \cdot \frac{1}{4}$, $g_3 = g_2 \cdot \frac{1}{4}$, $g_3 = 54 \cdot \frac{1}{4}$, $g_3 = 13.5$
$g_4 = g_{4-1} \cdot \frac{1}{4}$, $g_4 = g_3 \cdot \frac{1}{4}$, $g_4 = 13.5 \cdot \frac{1}{4}$, $g_4 = 3.375$

3. A colony of ants starts with 5 members. The colony triples every year.
   a. Write an explicit function to represent the sequence.
      $a_n = a_1(r)^{n-1}$
      $a_n = 5(3)^{n-1}$
   b. How many members will the colony have after 3 years?
      $a_3 = 5(3)^{3-1}$
      $a_3 = 45$
   c. How many years will it take for the colony to reach greater than 1,000 ants?
      $a_7 = 5(3)^{7-1} = 3645$
      $a_6 = 5(3)^{6-1} = 1215$
      $a_5 = 5(3)^{5-1} = 405$
      6 yrs

4. Find the common ratio and the missing term in the sequence
   7, 21, 63, 189, 567, ...
   $r = \frac{21}{7} = 3$

Feb 15-11:02 AM

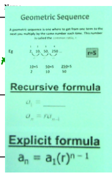
Geometric Sequences HW

Find the next three terms in each geometric sequence.

1. 2, 4, 8, 16, ... 32, 64, 128
2. 400, 200, 100, 50, ... 25, 12.5, 6.25 ($r = \frac{200}{400} = .5$)
3. 4, -12, 36, -108, ... 324, −972, 2916 ($r = \frac{-12}{4} = -3$)

Find the missing term(s) in each geometric sequence.

4. $\frac{1}{9}$, $-\frac{1}{3}$, 1, -3, 9, ... ($r = \frac{-3}{1} = -3$)
5. 2, 6, 18, 54, ... ($r = \frac{18}{6} = 3$)



Write the recursive rule and explicit rule for each geometric sequence.

6. 9, 27, 81, 243, ... Explicit: $a_n = 9(3)^{n-1}$ Recursive: $a_1 = 9$, $a_n = 3a_{n-1}$
7. 5, -5, 5, -5, ... Explicit: $a_n = 5(-1)^{n-1}$ Recursive: $a_1 = 5$, $a_n = -1a_{n-1}$
8. 12, 3, ¾, 3/16, ... Explicit: $a_n = 12(.25)^{n-1}$ Recursive: $a_1 = 12$, $a_n = .25a_{n-1}$

9. The first term of a geometric sequence is 1, and the common ratio is 10. What is the 10th term of the sequence?
   $a_n = 1(10)^{n-1}$
   $a_{10} = 1(10)^{10-1} = 1,000,000,000$

10. What is the 11th term of the geometric sequence 3, 6, 12, 24, ...?
   $a_n = 3(2)^{n-1}$ $a_{11} = 3(2)^{11-1} = 3072$

11. A construction company is building houses in a neighborhood. During the 1st month they built 3 homes, during the 2nd month they built 6 homes, and during the 3rd month they built 12 homes.
   3, 6, 12, ...
   a. Write the recursive rule for the sequence.
      $a_1 = 3$, $a_n = 2a_{n-1}$
   b. Write the explicit rule for the sequence.
      $a_n = 3(2)^{n-1}$
   c. When will the construction company build 48 homes?
      ~~$a_{48} = 3(2)^{48-1}$~~ = 5 month
      $a_n = 48!$ → $a_n = 3(2)^{n-1}$
      $a_5 = 3(2)^{5-1}$
      $a_5 = 48$

Feb 15-11:04 AM

Algebra 1 Name______________________ ID: 1

Geometric Sequence Practice Date________________ Period____

State if each sequence is geometric.

1) −4, 8, −16, 32, ...
2) 2, −12, −26, −40, ...
3) 11, 17, 23, 29, ...
4) 4, 12, 36, 108, ...
5) −10, −5, 0, 5, ...
6) −2, −12, −72, −432, ...
7) 1, 6, 36, 216, ...
8) 9, 99, 999, 9999, ...

Find the common ratio.

9) −4, 8, −16, 32, ...
10) −3, 9, −27, 81, ...
11) 2, 8, 32, 128, ...
12) 4, 12, 36, 108, ...

Feb 15-11:04 AM

---

13) 3, −9, 27, −81, ...
14) −1, −4, −16, −64, ...
15) 3, 6, 12, 24, ...
16) −4, 20, −100, 500, ...

Given the recursive formula for a geometric sequence find the first five terms.

17) $a_n = a_{n-1} \cdot 3$, $a_1 = 1$
18) $a_n = a_{n-1} \cdot 5$, $a_1 = 2$
19) $a_n = a_{n-1} \cdot 5$, $a_1 = -1$
20) $a_n = a_{n-1} \cdot 4$, $a_1 = -2$
21) $a_n = a_{n-1} \cdot -4$, $a_1 = -0.5$
22) $a_n = a_{n-1} \cdot 2$, $a_1 = -1$
23) $a_n = a_{n-1} \cdot \frac{1}{2}$, $a_1 = 4$
24) $a_n = a_{n-1} \cdot 2$, $a_1 = -3$

Feb 15-11:04 AM

Given the explicit formula for a geometric sequence find the 8th term.

25) $a_n = \frac{3}{2} \cdot \left(-\frac{1}{2}\right)^{n-1}$
26) $a_n = -4 \cdot (-2)^{n-1}$
27) $a_n = -3 \cdot (-2)^{n-1}$
28) $a_n = -3 \cdot \left(\frac{1}{3}\right)^{n-1}$
29) $a_n = 32 \cdot \left(\frac{1}{2}\right)^{n-1}$
30) $a_n = 2^{n-1}$
31) $a_n = 2 \cdot 4^{n-1}$
32) $a_n = -\frac{2}{3} \cdot \left(\frac{1}{2}\right)^{n-1}$

Find the recursive formula.

33) −0.5, 1, −2, 4, ...
34) 3, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, ...
35) 972, 324, 108, 36, ...
36) 1, 5, 25, 125, ...

Feb 15-11:04 AM

37) 375, 75, 15, 3, ...

38) 4, 20, 100, 500, ...

39) −1, 6, −36, 216, ...

40) 1, $-\frac{1}{2}$, $\frac{1}{4}$, $-\frac{1}{8}$, ...

Find the explicit formula.

41) −3, 6, −12, 24, ...

42) 125, −25, 5, −1, ...

43) 2, 1, $\frac{1}{2}$, $\frac{1}{4}$, ...

44) −2, 10, −50, 250, ...

45) −0.2, −1, −5, −25, ...

46) 1875, 375, 75, 15, ...

47) 32, 16, 8, 4, ...

48) −3, −9, −27, −81, ...

Feb 15-11:05 AM

2 highly missed from quiz

March 1, 2019, Friday

2. Identify the characteristics of the function below.

Domain R

Range (0, +∞)

Asymptote y = 0

X-intercept none

Y-intercept 2

Circle one: Increasing or Decreasing

End Behavior:

As $x \to -\infty, y \to$ +∞

As $x \to \infty, y \to$ 0

Geometric Sequence Formulas

Recursive: $a_n = r(a_{n-1})$

Explicit: $a_n = a_1 \cdot r^{n-1}$

10. Consider the first six terms of this sequence: 6, 12, 24, 48, 96, ...

Which equation defines the sequence?

a) $g_n = 6n$

b) $g_n = 6 + g_n$

c) $g_n = 6 \cdot (2)^n$

d) $g_n = 6 \cdot (2)^{n-1}$

$r = \frac{12}{6} = 2$

$r = \frac{24}{12} = 2$

5. Write an exponential equation given the table.

x	-3	-2	-1	0	1	2	3
y	½	1	2	4	8	16	32

A. $y = 2(2)^x$

B. $y = 1(4)^x$

C. $y = 4(8)^x$

D. $y = 4(2)^x$

y when x = 0

$b = \frac{y_2}{y_1} = \frac{8}{4} = 2$

$f(x) = a(b)^x$

$f(x) = 4(2)^x$

$y = ab^x$

C) $y = 4(8)^0 = 4$ ✓

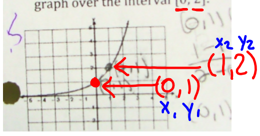
$y = 4(8)^1 = 32$ X

D) $y = 4(2)^0 = 4$ ✓

$y = 4(2)^1 = 8$ ✓

$y = 4(2)^2 = 16$ ✓

Feb 15-11:05 AM



4. Calculate the average rate of change graph over the interval [0, 2].

Slope Formula

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{2-1}{1-0} = \frac{1}{1} = 1$

Mar 1-10:45 AM

Mar 1-10:45 AM

TOTD ~ Geometric Sequences Name ____________

Create your own geometric sequence. The first term in your sequence is **12,620** and your sequence is **decaying**.

12620, ________, ________, ________, ...

a_1 = ________, r = ________

Write the recursive formula for YOUR sequence.	Write the explicit formula for YOUR sequence.

Find the 8th term in your sequence using the explicit formula.

TOTD ~ Geometric Sequences Name ____________

Create your own geometric sequence. The first term in your sequence is **8** and your sequence is **growing**.

8, ________, ________, ________, ...

a_1 = ________, r = ________

Write the recursive formula for YOUR sequence.	Write the explicit formula for YOUR sequence.

Find the 8th term in your sequence using the explicit formula.

Feb 15-11:09 AM

TOTD ~ Geometric Sequences Name ____________

Create your own geometric sequence. The first term in your sequence is **24330** and your sequence is **decaying**.

24330, ________, ________, ________, ...

a_1 = ________, r = ________

Write the recursive formula for YOUR sequence.	Write the explicit formula for YOUR sequence.

Find the 8th term in your sequence using the explicit formula.

TOTD ~ Geometric Sequences Name ____________

Create your own geometric sequence. The first term in your sequence is **3** and your sequence is **growing**.

3, ________, ________, ________, ...

a_1 = ________, r = ________

Write the recursive formula for YOUR sequence.	Write the explicit formula for YOUR sequence.

Find the 8th term in your sequence using the explicit formula.

Feb 15-11:10 AM

Algebra 1 ~ Day 4, 3/1/2018 **Unit 4 Test Review** Name ___________________

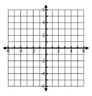
1) Write an explicit rule and find the 6th term: 256, 64, 16, 4, ...

2) Consider the sequence 2, 6, 18, 54, ...
a) Find the next 3 terms
b) Determine the recursive formula
c) Determine the explicit formula

3) Given that a sequence is geometric, $g_{10} = 98415$, and the common ratio is 3, find g_1.

For each of the functions, identify the characteristics.

4) Graph the function $f(x) = (2)^x - 3$



Domain: ___________________

Range: ___________________

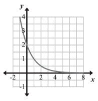
x - intercept: ___________________

y- intercept: ___________________

Growth or Decay

End Behavior: ___________________

5)



Domain: ___________________

Range: ___________________

x - intercept: ___________________

y- intercept: ___________________

Increasing or Decreasing

Rate of change over [-1, 2] _______

6) Describe the transformations made to $f(x) = 3^x$ to draw the following functions.

a) $g(x) = \frac{1}{4}3^{x-2} + 5$

b) $h(x) = -2(3)^{x+1}$

Feb 15-11:10 AM

7) Write an equation for the given description:

Exponential that has a base of 4, stretched by 3, moved right 7, and up by 1.

8) Given the equation $y = 650(1.075)^x$

a. Does the equation represent growth or decay?

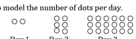
b. What is the growth factor?

c. What is the rate of growth?

d. What is the initial value?

e. Evaluate for x=9

9) Write an explicit formula and recursive formula to model the number of dots per day.



Day 1 Day 2 Day 3

How many dots will there be on day 7?

10) Taylor is training for a marathon. He decides to begin by running 3 miles and increase by 1.5 miles each day. Write an equation to represent the scenario. How long will it take him to run 26.2 miles?

Feb 15-11:10 AM

ught a Boston Whaler in 2004 for $12,500. The boat's value depreciates by 7% a year. How
is the boat worth now? How much is it worth in 2020?

pulation of a large city increases by a rate of 3% a year. When the 2000 census was taken, the
ation was 1.2 million.

ite a model for this population growth.

hat should the population be now? What is the projected population for 2020?

function represents the sequence?

3^{n-1} B. 6^{n-1}

$3(6)^{n-1}$ D. $6(3)^{n-1}$

n	1	2	3	4	5	...
a_n	6	18	54	162	486	...

function shows the function $f(x) = 3^x$ being translated 5 units to the left?

A. $f(x) = 3^x - 5$ B. $f(x) = 3^{x+5}$ C. $f(x) = 3^{x-5}$ D. $f(x) = 3^x + 5$

ble represents an exponential function. Write the equation that represents the function.

x	0	1	2	3	4
y	3	12	48	192	768

r False: An exponential function will always have an x-intercept.

r False: An exponential function will always have a y-intercept.

graph of the following function increasing or decreasing? $F(x) = ½^x$

Feb 15-11:10 AM

19) The table below describes an exponential function.

x	0	1	2	3
y	64	32	16	8

a) Is the function exponential growth or exponential decay?

b) Write the equation of the function.

20) An item is purchased for $4000 and it depreciated in value %10 per year. Write an equation to describe the value of the item in t years.

21) Given the function $y = 3(2)^{x-1} + 4$,

a) Does the function represent growth or decay? ___________________

b) What is the equation of the asymptote? __________

c) Describe the transformations that occur:

22) Given the function $y = 5(\frac{1}{2})^{x+2} - 3$

a) Does the function represent growth or decay? ___________________

b) What is the equation of the asymptote? __________

c) Describe the transformations that occur:

Feb 15-11:10 AM