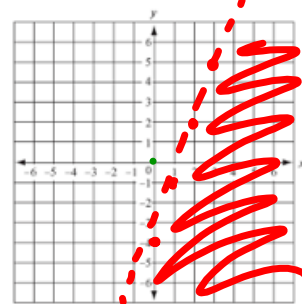


# Grab a Week #1 Packet off the front table Bell Ringer

Tuesday 11/19

1. Graph  $y < 3x - 4$ . Name one solution and one non-solution.

Solution:  $(4, -6)$  Non-solution:  $(0, 0)$



2. Jane buys three candy bars and four fruit roll ups for \$2.84.  
Peter buys three candy bars and one fruit roll up for \$1.79.  
What is the cost of a candy bar? What is the cost of a fruit roll up?

x: \$ bar  $.48$   
y: \$ fruit  $.35$

$$\begin{aligned} 3x + 4y &= 2.84 \\ -3x - y &= -1.79 \end{aligned}$$

$$\begin{aligned} 3y &= 1.05 \\ \frac{3y}{3} &= \frac{1.05}{3} \\ y &= .35 \end{aligned}$$

$$\begin{aligned} 3x + y &= 1.79 \\ 3x + .35 &= 1.79 \\ - .35 & \quad - .35 \\ \hline 3x &= 1.44 \\ \frac{3x}{3} &= \frac{1.44}{3} \\ x &= .48 \end{aligned}$$

## Hand out Disclosures

## RHS Secondary Math I Honors Disclosure

Erika Biehn – [erika.biehn@ccsdut.org](mailto:erika.biehn@ccsdut.org)

### Course Description – students will cover:

Relationships between quantities	Linear and Exponential Relationships
Reasoning and Equations	Descriptive Statistics
Congruence, Proof and Constructions	Connecting Algebra & Geometry through coordinates
Matrices, Vectors and Logic	

More detailed info can be accessed at <https://www.schools.utah.gov/file/99ed3612-4b81-4d40-bdb6-92fab69b62a8>

### Materials – Students need the following materials

- A notebook or binder with paper
- Pencil and Eraser
- Class Textbook (class set provided – available online – may check out as needed)
- Calculators will be provided in class, but **CANNOT** be taken home.
  - Recommended Calculator: TI-84 Plus CE

To use an online graphing calculator visit: <https://www.desmos.com/calculator>

### Grade Breakdown – Weighted categories

- **Tests (60%)** – Tests will be given at the end of each unit. Students are allowed **ONE** retake per exam. The retake **must** be taken before or after school, or during FLEX within one week of the original test day. If you choose to retake a test, the retake score is the score that goes on your grade – even if it's worse than the original score.
- **Assignments (15%)** – In-class assignments and homework are meant to help prepare you for quizzes and tests. We will have some online homework assignments through: <https://www.bigideasmath.com> (login with clever use your school google account) Assignments are due two days after being assigned.
- **Quizzes (15%)** – There will be one quiz per chapter. Several quizzes will be given throughout the trimester. These are shorter quizzes to help prepare for tests. There are **NO RETAKES** allowed on the quizzes. Your lowest quiz score will be dropped.
- **Final Exam (10%)** – A comprehensive final will be given at the end of the trimester. We will work hard to prepare as **there will NOT be any retakes for the Final Exam.**

**Big Ideas Math Apps:** Students can access the textbook on their phone by downloading the **Big Ideas Math** app. There is also a **Big Ideas Math Videos** app with extra examples as well as a **Big Ideas Math Solutions** app where students can check their answers. (Coming soon - a Big Ideas Homework app)

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(Turn over)

### Parent and Student Disclosure Acknowledgement

Student success is a team effort! When students, parents, and teachers work together to support and reinforce learning, student success is made easier. Acknowledging and complying with the items outlined in this disclosure will provide a framework for this success. To indicate that you have read, understand, and are willing to support these class rules and expectations, please sign and date the back, cut off this bottom piece and return to me.

What's the best way to contact you?      Email                      Phone Call                      Text

\*Any information you would like me to know about your child.

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**Rules and Expectations** - Each student has a right to learn in a safe and productive environment

- Take advantage of all learning opportunities      Respect and cooperate with teacher and classmates
- Follow all classroom procedures and school policies      Maintain and engage in a safe learning environment

**Behavior** – if a student misbehaves, these steps will be followed:

- Students will fill out an “Oops Slip” when their behavior is affecting themselves and others from learning.
  - 1-2 slips = recorded warnings
  - 3 slips = parent contact
  - 4-5 slips = behavior contract
  - 6 + slips = meeting with administration to discuss placement

**Box o’ Distraction**

- If an item is inhibiting student learning, it will be confiscated and placed in the “Box o’ Distraction.” **Said items may be picked up after school. If you don’t want your phone taken away, don’t have it out at inappropriate times!!!** Distractions include but are not limited to:
  - Phone, ipod/music player, ipad/tablet, other music/electronic devices, headphones, reading book, makeup, food, toys, games etc...
- Mrs. Biehn determines what designates the definition of *distracting*

**Class Resources**

Big Ideas online textbook and resources: <https://www.bigideasmath.com>  
 Class website: [www.biehnmath.weebly.com](http://www.biehnmath.weebly.com)  
 Canvas: <https://ccsdut.instructure.com/login/ldap>  
 Tutoring is available after school Mon-Thurs 2:45 - 4:15 in room 208

**Grading**

A	93 – 100%	B-	80 – 82%	D+	67 – 69%
A-	90 – 92%	C+	77 – 79%	D	63 – 66%
B+	87 – 89%	C	73 – 76%	D-	62 – 60%
B	83 – 86%	C-	70 – 72%	F	Below 60%

**Communication**

Any questions or concerns, **please feel free to visit** or contact me by email or phone.  
 Email: [erika.biehn@ccsdut.org](mailto:erika.biehn@ccsdut.org)      Phone: (435) 792-7780 ext 5438

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STUDENT NAME (printed): \_\_\_\_\_ HOUR: \_\_\_\_\_

STUDENT SIGNATURE: \_\_\_\_\_

PARENT/GUARDIAN SIGNATURE: \_\_\_\_\_

PARENT/GUARDIAN EMAIL: \_\_\_\_\_

## **Essential Question**

What are some of the characteristics of the graph of an exponential function?

Copy and complete each table for the *exponential function*  $y = 16(2)^x$ . In each table, what do you notice about the values of  $x$ ? What do you notice about the values of  $y$ ?

$$y = 16(2)^x$$

x	y
0	16
1	32
2	64
3	128
4	256
5	512

Handwritten annotations: Blue arrows show a constant multiplier of 2 between consecutive y-values. A red bracket spans from x=1 to x=5, and a red vertical line is drawn next to it.

$$y = 16(2)^x$$

x	y
0	16
2	64
4	256
6	1024
8	4096
10	16384

Handwritten annotations: Blue arrows show a constant multiplier of 4 between consecutive y-values.

Create a table of values for the exponential function

$$y = 16 \left( \frac{1}{2} \right)^x$$

$$\left( \frac{1}{2} \right)^2$$

$$\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$$

x	y
0	16
1	8
2	4
3	2
4	1
5	$\frac{1}{2}$
6	$\frac{1}{4}$

$$\left( \frac{1}{2} \right)^{-1} = 16 \left( \frac{2}{1} \right)^1$$

$$a^{-b} = \frac{1}{a^b}$$

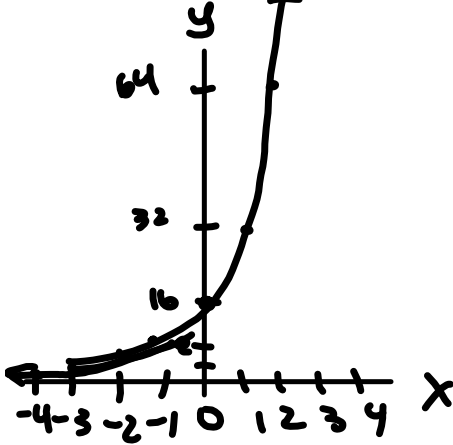
Do you think the statement below is true for *any* exponential function?  
Justify your answer.

*“As the independent variable  $x$  changes by a constant amount, the dependent variable  $y$  is multiplied by a constant factor.”*

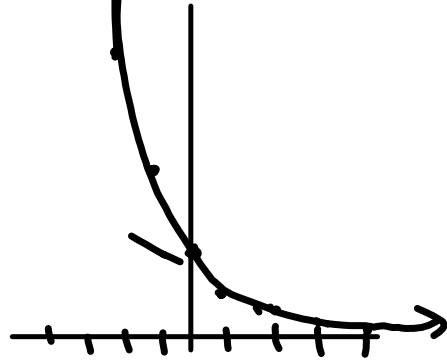


Sketch the graphs of the functions given. How are the graphs similar?  
How are they different?

$$y = 16(2)^x$$



$$y = 16\left(\frac{1}{2}\right)^x$$



## Exponential Functions

$$y = \underline{a}(b)^x$$

$$y = \underline{a} \cdot b^x$$

a: y-int

b: common ratio

Does each table represent an exponential function? Explain.

a.

x	0	1	2	3
y	2	4	12	48

$\times 2$   $\times 3$   $\times 4$

No ☹

If so, write the equation of the function

b.

x	0	1	2	3
y	4	8	16	32

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

$$4(2)^2$$

2, 16

Does the table represent an exponential function? Explain.

1.

x	0	1	2	3
y	8	4	2	1

+1  
x  $\frac{1}{2}$

$$y = 8\left(\frac{1}{2}\right)^x$$

If so, write the equation of the function

2.

x	-4	0	4	8
y	1	0	-1	-2

+4  
-1

Linear  
 $y = mx + b$   
 $y = -\frac{1}{4}x$

Evaluate each function for the given value of  $x$ .

$$y = -2(5)^x; x = 3$$

$$-2(5)^3$$

$$-2(125)$$

$$-250$$

$$y = 3(0.5)^x; x = -2$$

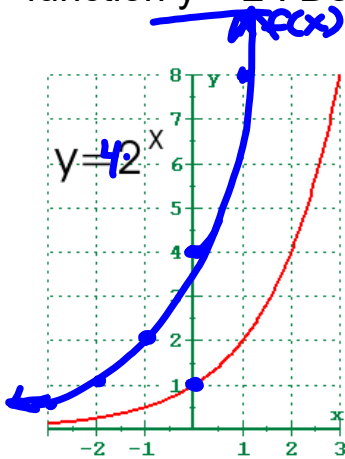
$$3(0.5)^{-2} = 12$$

Evaluate the function when  $x = -2, 0,$  and  $3.$

$$y = 2(9)^x$$

$$y = 1.5(2)^x$$

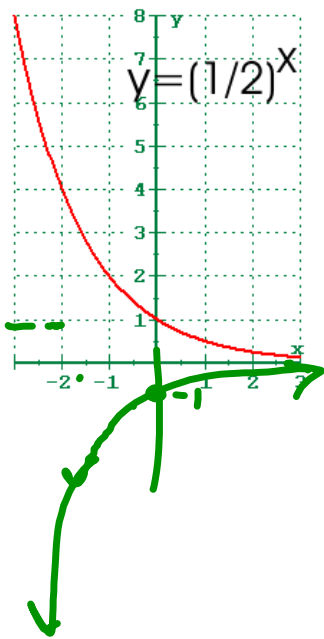
Graph  $f(x) = 4(2)^x$ . Compare the graph to the graph of the parent function  $y = 2^x$ . Describe the domain and range of  $f$ .



x	y
-2	
-1	
0	
1	
2	
3	

Domain:  $(-\infty, \infty)$       Range:  $(0, \infty)$

Graph  $f(x) = -\left(\frac{1}{2}\right)^x$ . Compare the graph to the graph of the parent function  $y = (1/2)^x$ . Describe the domain and range of  $f$ .



x	y
-2	-4
-1	-2
0	-1
1	-1/2
2	-1/4
3	-1/8

Domain:

$(-\infty, \infty)$

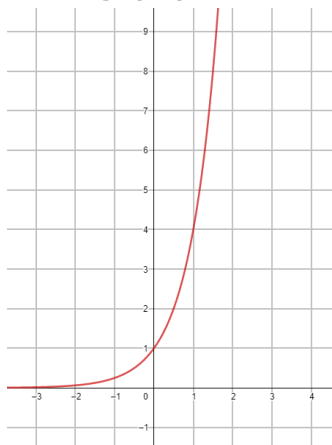
Range:

$(-\infty, 0)$



Graph the function. Compare the graph to the graph of the parent function. Describe the domain and range of  $f$ .

$$g(x) = 4^x$$



x	y
-2	
-1	
0	
1	
2	
3	

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

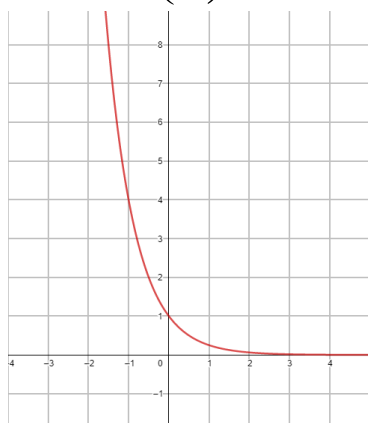
x	y
-2	
-1	
0	
1	
2	
3	

Domain:

Range:

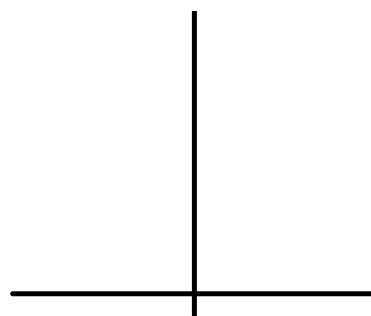
Graph the function. Compare the graph to the graph of the parent function. Describe the domain and range of  $f$ .

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



x	y
-2	
-1	
0	
1	
2	
3	

$$f(x) = 2\left(\frac{1}{4}\right)^x$$

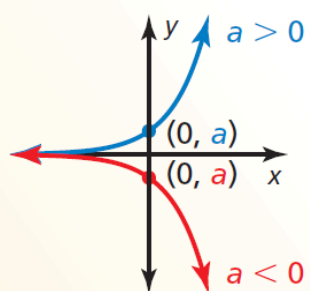


Domain:

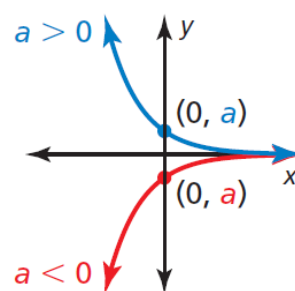
Range:

## Core Concept

Graphing  $y = ab^x$  When  $b > 1$

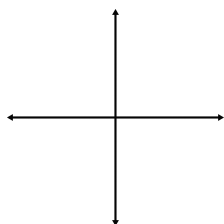


Graphing  $y = ab^x$  When  $0 < b < 1$

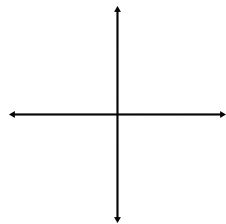


Describe each graph

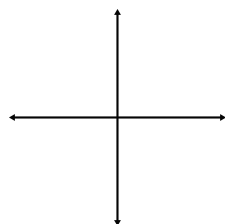
$$y = 5(2)^x$$



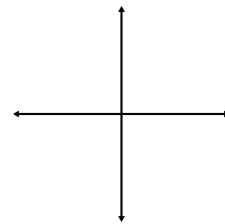
$$y = -5(2)^x$$



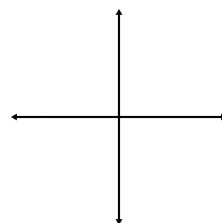
$$y = 5(1/2)^x$$



$$y = -5(1/2)^x$$



What about  $y = 5(-2)^x$

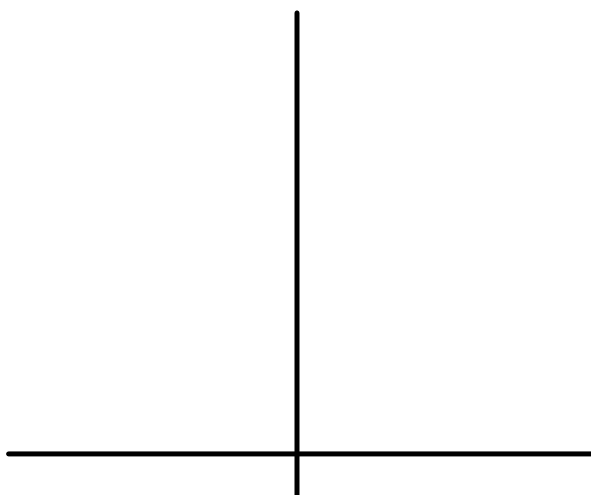


# WHITEBOARDS

Graph

$$y = 3 \cdot 2^x$$

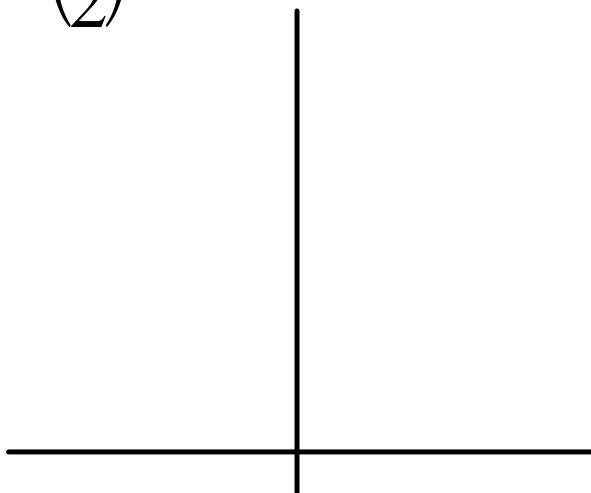
x	y
-2	
-1	
0	
1	
2	



Graph

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

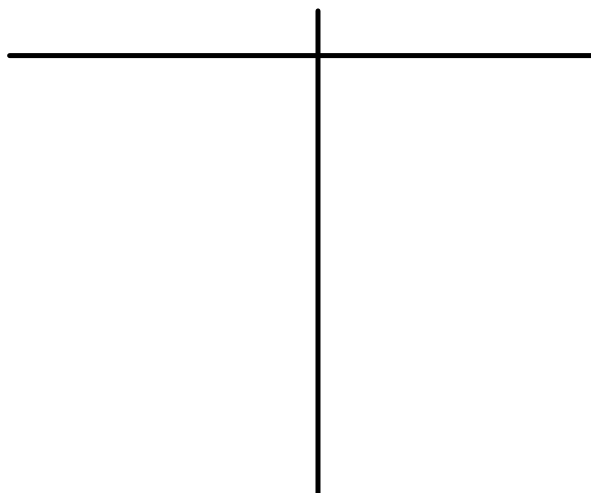
x	y
-2	
-1	
0	
1	
2	



Graph

$$y = -2 \cdot (3)^x$$

x	y
-2	
-1	
0	
1	
2	

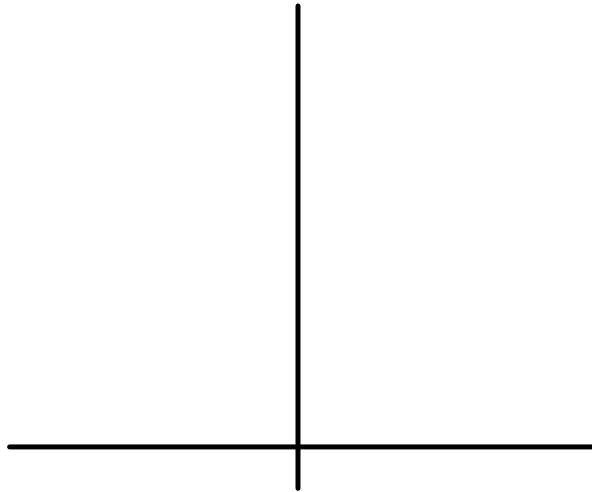




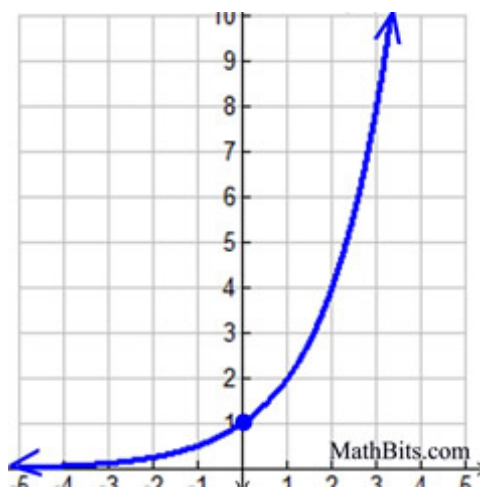
Graph

$$y = 4 \cdot 3^x + 1$$

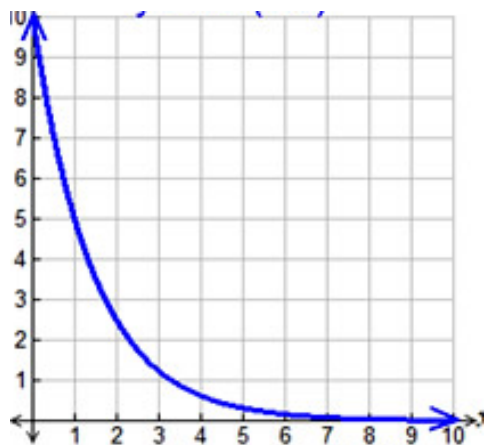
x	y
-2	
-1	
0	
1	
2	



Write the equation of the function shown



Write the equation of the function shown



Write the equation of the function shown

