Name: _____ Class Period: _____

5.7

Algebra I Agenda

Six Weeks ends Friday!! Don't forget the last page!

				Stamp
Monday	4/6/2015	**Objective:**	Review	
		Assignment:	Study!!	
Tuesday	4/7/2015	**Objective:**	Test Unit 9	
		Assignment:	Notebook Check Unit 9 Today!	
Wednesday	4/8/2015	**Objective:**	Introduction to Exponentials	
		Assignment:	Practice #1-12	
Thursday	4/9/2015	**Objective:**	Graphing Exponentials	
		Assignment:	Practice #1-8	
Friday	4/10/2015	**Objective:**	Quiz	
		Assignment:	5.7 Due Today	

Warm-Up Grade: _____   Final Weekly HW Grade: _____

Be**llwo**rk

Name: _____

Period: _____

Week of _____ - _____

Monday	thursday
Tuesday	Friday
Wednesday	**CHALLENGE**

Name: _____

## Complete the table on the previous page and use it to answer the following questions:

1. After how many hours will the alien population be 512? Explain how you determined your answer.

2. How large will the alien population be after 12 hours? After 24 hours? Explain how you determined your answers.

3. Is the alien population growing at a constant rate? Explain your answer.

4. On the grid, plot the number of aliens with respect to time.
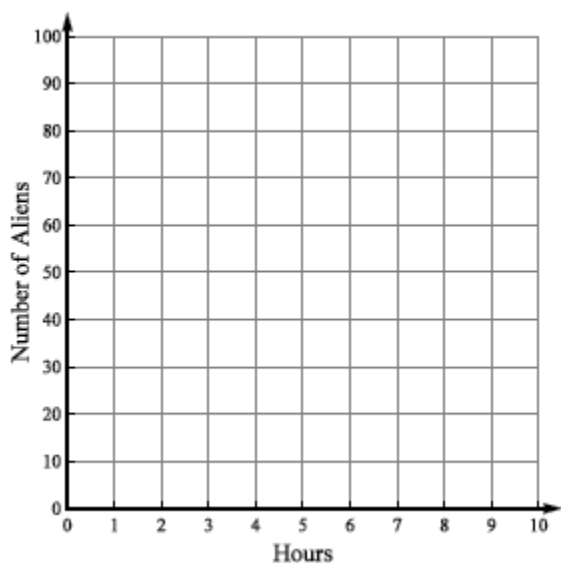
5. Should the points on the graph be connected with a smooth curve? If not, why should they remain unconnected? Provide at least one reason to explain your answer.

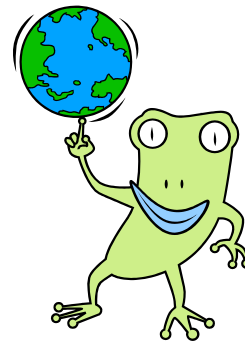6. If the equation representing the number of aliens is f(n) = _____(see your table), find the following values.
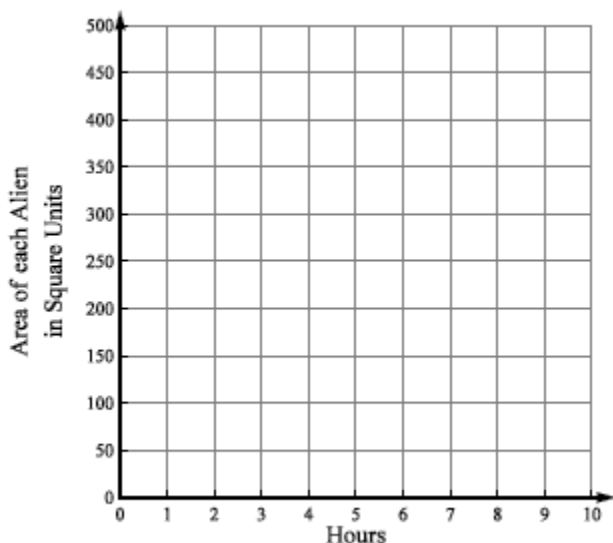
   a. f(-2) = _____   B. f(14) = _____   C. Find x if y = 262144.   D. Find x if y = $\frac{1}{16}$

Area of each alien as a function of time.

7. ON THE GRID, PLOT THE SIZE (area) OF EACH ALIEN, IN SQUARE UNITS, WITH RESPECT TO TIME.


8. DESCRIBE WHAT IS HAPPENING TO THE SIZE OF AN INDIVIDUAL ALIEN.

9. THE GRAPH OF THE ALIEN'S SIZE WITH RESPECT TO TIME IS AN EXAMPLE OF "EXPONENTIAL DECAY". BASED ON THE TABLE AND THE SECOND GRAPH, CREATE A DEFINITION FOR EXPONENTIAL DECAY.

10. WILL THE ALIENS EVENTUALLY DISAPPEAR? JUSTIFY YOUR ANSWER.

11. WHAT IS THE SUM OF THE AREAS OF ALL THE ALIENS AT ANY POINT IN TIME?

12. WILL THE ALIENS BE ABLE TO TAKE OVER PLANET EARTH? WRITE A PARAGRAPH EXPLAINING WHAT WILL HAPPEN TO THE ALIEN INVASION FORCE.

Practice – Graphs of Exponential Functions   **pp 772-778**

Name _____ Date _____ Period _____

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

x	y
-3	
-2	
-1	
0	
1	
2	
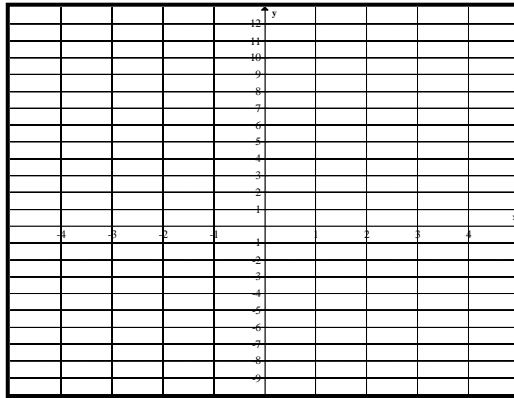
Increasing/Decreasing

_____

Domain: _____

Range: _____

2. $f(x) = 4 \cdot \left(\dfrac{1}{2}\right)^x$

x	y
-2	
-1	
0	
1	
2	
3	
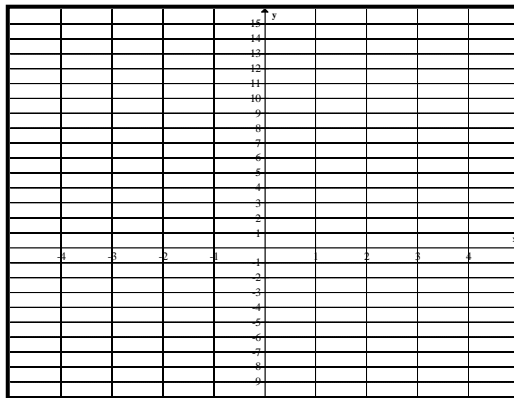
Increasing/Decreasing

_____

Domain: _____

Range: _____

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

x	y
-2	
-1	
0	
1	
2	
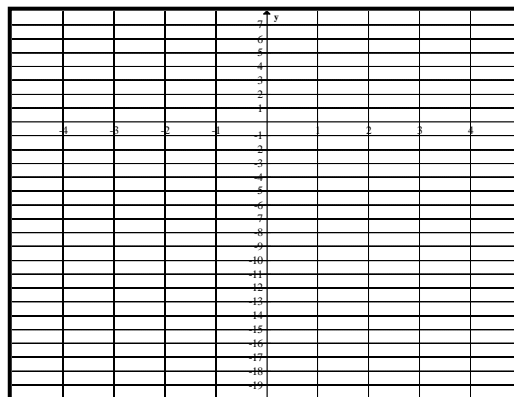
Increasing/Decreasing

_____

Domain: _____

Range: _____

4. $y = -2(0.25)^x$

x	y
-2	
-1	
0	
1	
2	

Increasing/Decreasing

_____

Domain: _____

Range: _____

5. $f(x) = -\left(\dfrac{1}{4}\right)^{x}$

x	y
-2	
-1	
0	
1	
2	
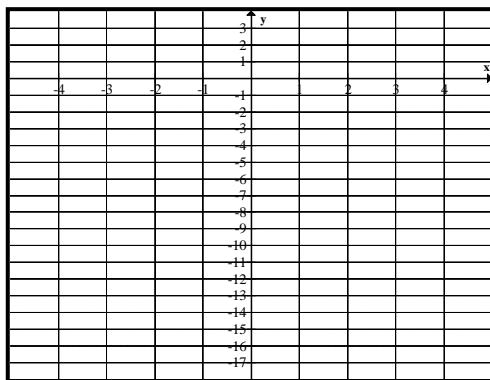
Increasing/Decreasing

_____

Domain: _____

Range: _____

6. Given the equation $f(x) = a\text{∙}5^{x}$, what value(s) of a will make the graph increase at a slower rate?

7. Which function is not decreasing?

A $y = -(3)^{x}$

B $y = 2\left(\dfrac{1}{6}\right)^{x}$

C $y = \left(\dfrac{1}{4}\right)(2)^{x}$

D $y = \left(\dfrac{2}{3}\right)\left(\dfrac{1}{6}\right)^{x}$

8. Which of the following is the exponential parent function?

A $f(x) = x$

B $f(x) = x^{2}$

C $f(x) = 2^{x}$

D Does Not Exist

Name _____ Date _____ Class _____

Test Preparation Practice
Algebra 1

> **A.6.F** Interpret and predict the effects of changing slope and *y*-intercept in applied situations.

Solve each problem. Choose the best answer for each question and record your answer on the Student Answer Sheet. Figures are not drawn to scale

1. A taxi company charges a $4.00 fee plus an additional $2.10 per mile traveled. The function $f(x) = 2.1x + 4$ represents this relation. If the taxi fee increases to $4.25, what characteristic of the graph of this relationship would increase?

   A Slope

   B *x*-intercept

   C *y*-intercept

   D There would be no change.

2. A gym membership costs $15 per month plus $4 per visit. The membership fees can be modeled by the function $c = 4v + 15$, where *c* is the cost per month and *v* is the number of visits. If the cost of each visit were to increase by a factor of 1.5, what would be the *y*-intercept of the function?

   F 6

   G 15

   H 22.5

   J 30

3. A silkscreen shop charges a flat fee of $4.50 for a school logo and an additional $0.50 per letter of the name to be printed on a sweatshirt. If the logo fee were increased from $4.50 to $5.00, which statement would be true?

   A The slope would increase.

   B The *y*-intercept would increase.

   C The slope and *y*-intercept would decrease.

   D The slope and *y*-intercept would stay the same.

4. A video rental company charges a membership fee of $5 per year plus $4 for each movie rented. If the slope of the function were to increase, what does that mean about the price that the rental company charges?

   F They raised their yearly membership fee.

   G They lowered the cost for each movie rental.

   H They raised the cost for each movie rental.

   J They lowered their yearly membership fee.

5. The graph shows Tisha's bank balance if she saves $20 per week. Which statement would NOT be true if the slope of the line were to increase?
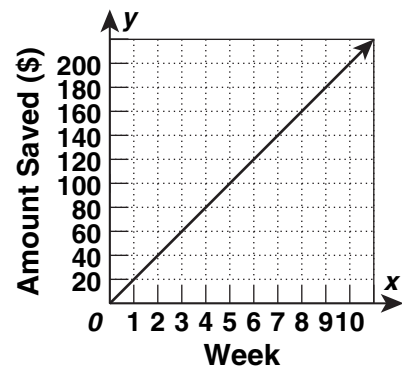
   A Tisha is saving more money per week.

   B Tisha started with more money in her bank account.

   C It will take less time for Tisha's balance to reach $225

   D After 9 weeks Tisha will have more than $180 in her bank account.

Holt Algebra 1