

AGENDA

Objective: **SWBAT** model and solve real-world problems involving exponential and logarithmic relationships

- 1) Take out HW to be checked/DO NOW
- 2) HW Questions
- 3) LOG BINGO

HW: "Logs worksheet #7"

Unit Test next week

C block- Tuesday

E block- Wednesday

Numbers

- Place the following numbers in any empty box. These numbers represent answers to exponential & logarithm problems.

$-29/6$, $1/2197$, $1/6$, -1 , -2 , -3 , -4 , -5 , ± 7 ,
 0.301 , 0.699 , 2.204 , 2 , 3 , 4 , 5 , 6 , 8 ,
 9 , 10 , 11 , 12 , 216 , 625 , **FREE**

BINGO

**$-29/6, 1/2197, 1/6, -1, -2, -3, -4, -5, \pm 7,$
0.301, 0.699, 2.204, 2, 3, 4, 5, 6, 8,
9, 10, 11, 12, 216, 625, FREE**

EXPONENTIALS AND LOGARITHMS

M	A	T	H	O

©The Mailbox® • www.themailbox.companion.com • Feb./Mar. 2011

HW: "Logs worksheet #7"

Exponential & Logarithmic Function Review

1. What is the conversion from Exponential to Logarithmic form ?

2. Identify each as linear, exponential, logarithmic, quadratic, or neither.

a. $y = 2x + 7$

b. $f(x) = 4^x + 3$

c. $y = \log_4 36$

d. $f(x) = 1 - 3x^2 + 9$

e. $y = 3(.01)^x - 10$

f. $f(x) = 4x^4 - 3x^3 - x$

3. Write as a single log.

a. $\log x + \log y$

b. $\log_9 12 - \log_9 6$

c. $4 \cdot \log_3 2 - \log_3 8$

d. $2 \cdot \log_9 3 - (\log_9 7 + \log_9 2)$

4. Solve for x.

a. $\log_9 x = 0.5$

b. $\log x = 0$

c. $\log_2 x = -2$

d. $\log_x 81 = 4$

e. $7000(1.09)^x = 20,000$

d. $2^x = 9$

HW: "Logs worksheet #7" continued...

f. $\log 210 = x$

g. $2^{x-3} + 3 = 131$

h. $\log_3 5 = x$

i. $4^{2x-5} = 4^{7x}$

j. $2000(x)^{13} = 5300$

k. $\log_3(4x - 6) = 4$

l. $\log_2 2^9 = x$

m. $3^{\log_3 27} = x$

n. $\log_x 150 = -3$

o. $x^{\frac{5}{2}} = 32$

p. $2 \cdot \log_3 x = \log_3(2x + 15)$

q. $\log_7(\log_5 x) = 0$

5. Your Honda civic depreciates at a rate of 12% per year. You plan to trade the car in when it reaches half of its current value of \$7500. How long until this occurs?

6. Your car depreciates in value at the rate of 15% a year. If you paid \$28,000 for it and it is now worth \$15,000, then how old is your car?

HW: "Logs worksheet #7" continued...

7. If you own some stock that is worth \$12,000 today, and its value has grown at an average of 7.4% each year over time. Assume your grandparents purchased the stock for you 10 years ago.
- What did they [initially] pay for it?
 - Assume you leave the stock alone for the next 50 years, and this average growth rate continues. What will your stock be worth then?
 - Assume you sell this stock once it doubles in value (from today's value) how long will you have to wait according to exponential growth?
8. You invest \$7000 in a CD and after 7 years it is worth \$9000. What is the **rate** of increase?
9. Given that $\log_3 8 = 1.8923$, find
- $\log_3 64$
 - $\log_3 24$
 - $\log_3 \frac{8}{9}$
10. Solve for x.
- $\log_{12}(x^2 - 7) = \log_{12}(x + 5)$
 - $\log_7(x^2 - 4) = \log_7(-x + 2)$