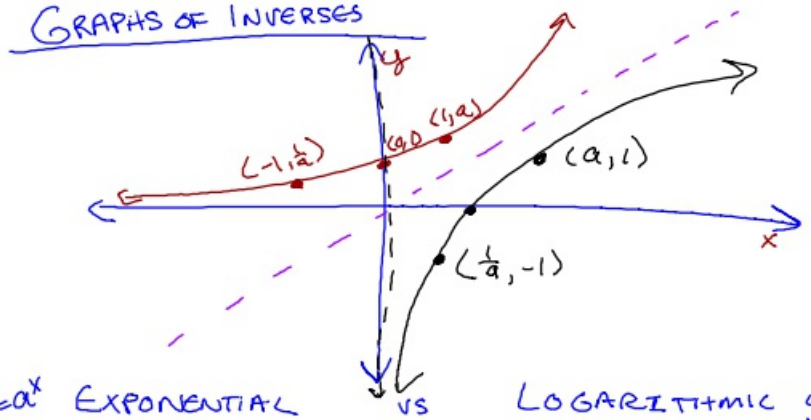
Questions:	Notes:
	#5 $n = 4000e^{.08t}$
	good to Know!
	4T #5
	$32 = a \cdot 2^b$ $\quad 108 = a \cdot 3^b$
	$\ln 32 = \ln(a \cdot 2^b)$
	$\ln 32 = \ln a + \ln 2^b$
	$\ln 32 = \ln a + b\ln 2$ $\quad \ln 108 = \ln a + b\ln 3$
	$\ln a = \ln 32 - b\ln 2$ $\quad \ln a = \ln 108 - b\ln 3$
	$\ln 32 - b\ln 2 = \ln a$
	$\ln 32 - b\ln 2 = \ln 108 - b\ln 3$
	$-b\ln 2 = \ln 108 - b\ln 3 - \ln 32$
	$b\ln 3 - b\ln 2 = \ln 108 - \ln 32$
	$b\ln\left(\frac{3}{2}\right) = \ln\left(\frac{108}{32}\right)$
	$b(\ln 3 - \ln 2)$
	$b = \frac{\ln 108 - \ln 32}{\ln\left(\frac{3}{2}\right)}$
	$b = 3$
	$\ln a = \ln 32 - 3\ln 2$
	$\ln a = \ln\left(\frac{32}{2^3}\right)$
	$a = \frac{32}{8} = 4$

Questions:	Notes:
	REVIEW QUESTIONS TO FOCUS ON:
	1ST SECTION: #1, 4, 5
	2nd Section: 3, 4, 8
	QUIZ: #3
	ex) → $\log_2 \sqrt{x} = \log_2 x^{\frac{1}{2}} = \frac{1}{2} \log_2 x$
	ex) $x^{3.25} = 7$ $x^3 = 7$
	$x = 7^{1/3.25}$ $\sqrt[3]{x} = \sqrt[3]{7}$
	$x \approx 1.82$ $= 7^{1/3}$

Questions:	Notes: Review #8
	a. $f(x) = 3e^{2x}$ Find $f^{-1}(x)$
	$y = 3e^{2x}$ ① replace $f(x)$ with y
	$\frac{x}{3} = \frac{3e^{2y}}{3}$ ② switch x and y ③ divide both by 3
	$\frac{x}{3} = e^{2y}$
	$\ln\left(\frac{x}{3}\right) = \ln e^{2y}$ ④ take ln of both sides - ln and e cancel each other
	$\ln\left(\frac{x}{3}\right) = 2y$
	$\frac{\ln\left(\frac{x}{3}\right)}{2} = y$ ⑤ divide by 2 ⑥ replace y with f^{-1}
	8c. $f(x) = \log_2(4x)$ ① $f(x) = y$
	$y = \log_2(4x)$ ② $x \leftrightarrow y$
	$x = \log_2(4y)$ ③ switch to equivalent exponent
$\frac{2^5}{2^2} = 2^3 = 8$	
	$\frac{2^x}{4} = \frac{4y}{4}$
	$y = \frac{2^x}{4} = \frac{2^x}{2^2} = 2^{(x-2)}$

GRAPHS OF INVERSES



$y=a^x$ EXPONENTIAL

INCREASING

HORIZONTAL asym. $y=0$

DOMAIN: $\mathbb{R}$

RANGE: $\mathbb{R}^+$ $y>0$

y-int: $(0,1)$

VS

LOGARITHMIC $y=\log_a(x)$

INCREASING

VERTICAL asym. $x=0$

RANGE: $\mathbb{R}$

DOMAIN: $\mathbb{R}^+$

x-int: $(1,0)$

REFLECT OVER $y=x$

$(x,y) \rightarrow (y,x)$