11. From the 1990 census, the population of Tea was 786. In the 2000 census, the population had grown to 1742.

x = # yrs since 1990

$(0, 786)$ $(10, 1742)$

$$\frac{1742}{786} = \frac{786(b)^{10}}{786}$$

$$\sqrt[10]{\frac{1742}{786}} = \sqrt[10]{b^{10}}$$

$10 \sqrt[x]{\ } (1742/786)$

$1.083 \approx b \longrightarrow y = 786(1.083)^x$

$2007 \to x = 17$ $y = 786(1.083)^{17}$ 3049

$2016 \to x = 20$ $y = 786(1.083)^{20}$ 3873

$786(1.08)^{17} = 2908$

$786(1.08)^{20} = 3664$

16

$$10^{4x+1} > 10^{2(x-2)}$$

$$4x + 1 > 2x - 4$$

$$2x + 1 > -4$$

$$2x > -5$$

$$x > -\frac{5}{2}$$

10

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

$$y = 1(.25)^x$$

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

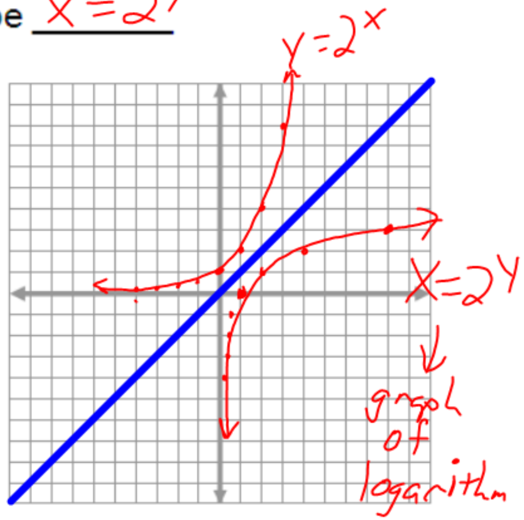
For the equation $y = 2^x$, the inverse would be $x = 2^y$

$y = 2^x$

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

$x = 2^y$

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



To convert from exponential form to logarithmic form and vice versa:

Exponential form

$x = b^y$ → exponent

b → base

Logarithmic form → log

$\log_b x = y$

log base b of x equals y