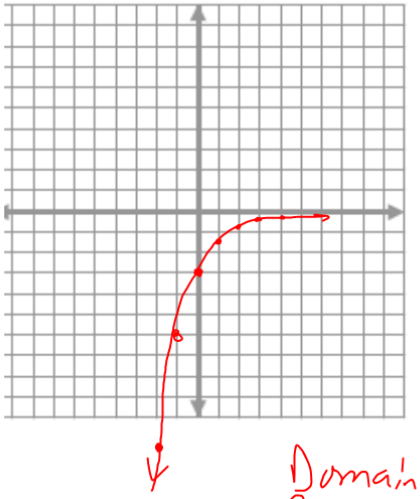
2. $y = -3(0.5)^x$



x	y
-3	-24
-2	-12
-1	-6
0	-3
1	-1.5
2	-.75
3	-.375
4	-.1875

Domain: all real numbers

Range: $y < 0$ OR all negative numbers

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

x = yrs since 1990

$(0, \underset{a}{786})\ (10, 1742)$

$y = a(b)^x$

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

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

$1.083 \approx b$

$y = 786(1.083)^x$

$10\sqrt{(1742/786)}$

a. 2007 → $x = 17$

b. 2010 → $x = 20$

8 $(0, -.4)$ $(2, -10)$ $y = a(b)^x$

a x y

$$\frac{-10}{-.4} = \frac{-.4(b)^2}{-.4}$$

$$\sqrt{25} = \sqrt{b^2}$$

$$.5 = b$$

$$y = -.4(5)^x$$

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

---

14 $2^{3(2x-5)} \geq 2^{2x+16}$

$$6x - 15 \geq 2x + 16$$

$$4x - 15 \geq 16$$

$$4x \geq 31$$

$$x \geq \frac{31}{4}$$

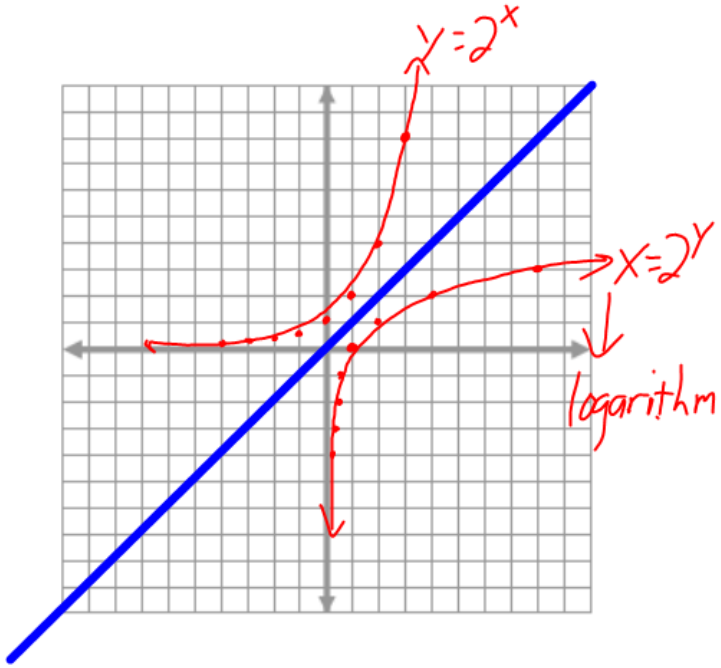
$y = 2^x$

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

inverse

$x = 2^y$

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

↓ base

Logarithmic form → log

$\log_b x = y$ → exponent

↓ base

log base b of x equals y