

Algebra II

10-4

Logarithms

Given - $b^x = y$

Logarithmic Form - $\log_b y = x$

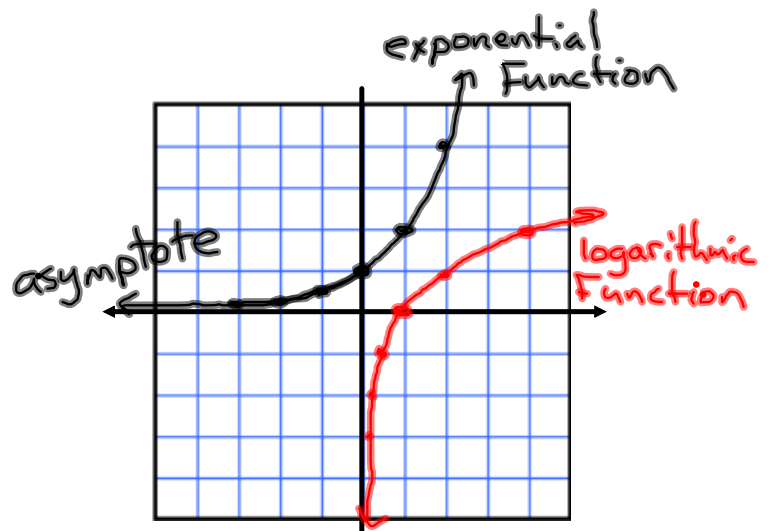
Important! Remember this! - The answer to a logarithm is a power.

Why do we need Logarithms? - To get the variable out of the exponent.

Graph: $y = 2^x$

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

Then Graph its inverse.



Simplify each logarithm. (pg. 470)

1) $\log_5 125 = x$

$$5^x = 125$$

$$5^x = 5^3$$

$$x = \boxed{3}$$

13) $\log_7 \sqrt[3]{49}$

$$7^x = \sqrt[3]{49}$$

$$7^x = 7^{\frac{2}{3}}$$

$$x = \boxed{\frac{2}{3}}$$

9) $\log_6 6\sqrt{6} = x$

$$6^x = 6\sqrt{6}$$

$$6^x = 6 \cdot 6^{\frac{1}{2}}$$

$$6^x = 6^{1+\frac{1}{2}}$$

$$6^x = 6^{\frac{3}{2}}$$

$$x = \boxed{\frac{3}{2}}$$

Solve.

$$19) \log_7 x = 2$$

$$7^2 = x$$

$$\{49\}$$

$$27) \log_x 27 = \frac{3}{2}$$

$$\left(x^{\frac{3}{2}}\right)^{\frac{2}{3}} = (27)^{\frac{2}{3}}$$

$$x = \sqrt[3]{27^2}$$

$$x = 9$$

$$\{9\}$$

Pg 470

1-30all

Notice: A calculator with a log button will be needed for

class in 2 days! Thursday, March 12
(Date)