

Fill in the Blanks

Exponentials and Logarithms

WITHOUT USING A CALCULATOR		
Exponential Form	Logarithmic Form	Solve for x
$5^x = 25$	$\log_5 25 = x$	$x = 2$
$2^x = 512$	$\log_2 512 = x$	$x = 9$
$3^x = 243$	$\log_3 243 = x$	$x = 5$
$x^3 = 64$	$\log_x 64 = 3$	$x = 4$
$10^x = 10000$	$\log_{10} 10000 = x$	$x = 4$
$5^5 = x$	$\log_5 x = 5$	$x = 3125$
$3^x = \frac{1}{9}$	$\log_3 \left(\frac{1}{9}\right) = x$	$x = -2$
$8^{1/3} = x$	$\log_8 x = \frac{1}{3}$	$x = 2$
$a^x = a$	$\log_a a = x$	$x = 1$
$b^x = 1$	$\log_b 1 = x$	$x = 0$

USING A CALCULATOR		
Exponential Form	Logarithmic Form	Solve for x
$4^x = 20$	$\log_4 20 = x$	$x = 2.16$
$7^x = \frac{1}{4}$	$\log_7 \left(\frac{1}{4}\right) = x$	$x = -0.712$
$11^x = 800$	$\log_{11} 800 = x$	$x = 2.79$
$3^x = 765$	$\log_3 765 = x$	$x = 6.04$
$x^5 = 18$	$\log_x 18 = 5$	$x = 1.78$
$20^x = 0.3$	$\log_{20} 0.3 = x$	$x = -0.402$
$6^{3.2} = x$	$\log_6 x = 3.2$	$x = 309$
$x^{-2} = \frac{1}{10}$	$\log_x \left(\frac{1}{10}\right) = -2$	$x = 3.16$
$0.5^x = 3$	$\log_{0.5} 3 = x$	$x = -1.58$
$12^{-0.9} = x$	$\log_{12} x = -0.9$	$x = 0.107$