

PAGE _____

DATE _____

LOGARITHMIC FUNCTIONS, EQUATIONS AND INEQUALITIES

- a) $\log_3(x-2) = 5$
 b) $\ln x \geq 9$
 c) $y = -\log_{1/2} x$
- ALL INVOLVE EXPRESSIONS W/
 LOGARITHMS
 - A AND B INVOLVE ONLY ONE
 VARIABLE BUT C EXPRESS
 RELATIONSHIPS
 - A AND C ARE EQUALITY

LOGARITHMIC EQUATION $\rightarrow$ AN EQUATION INVOLVING LOGARITHMS

EX: $\log_x 2 = 4$

LOGARITHMIC INEQUALITY $\rightarrow$ AN EQUALITY INVOLVING LOGARITHMS

EX: $\ln x > (\ln x)^2$

LOGARITHMIC FUNCTION $\rightarrow$ FUNCTION OF THE FORM $f(x) = \log_b x$

EX: $g(x) = \log_3(x)$

EX: $f(x) = \log_b x$

ACTIVITY A

x	-4	-1	0	3	5
$f(x) = 3^x$	$1/81$	$1/3$	1	27	243

ACTIVITY B

x	$1/81$	$1/3$	1	27	243
$g(x) = \log_3 x$	-4	-1	0	3	5

LOGARITHMIC FUNCTION IS AN INVERSE OF
EXPONENTIAL FUNCTION