

Which of the following functions are one-to-one? For each one-to-one function, determine the inverse function.

Function	One-to-One? (Y or N)	Inverse Function
$f(x) = e^{2x}$		
$f(x) = e^{-2x}$		
$f(x) = \ln(x + 2)$		
$f(x) = 2 \ln x$		
$f(x) = \tan^{-1}(x + 6) + \frac{\pi}{2}$		
$f(x) = x^3 + 1$		
$f(x) = 1 - x^2$		

The following equations involve functions and their inverses. For each, specify the values of  $x$  for which the equation is true.

Equation	Correct Values of $x$
$\ln(e^x) = x$	
$e^{\ln x} = x$	
$\sin(\sin^{-1} x) = x$	
$\sin^{-1}(\sin x) = x$	
$\cos(\cos^{-1} x) = x$	
$\cos^{-1}(\cos x) = x$	
$\tan(\tan^{-1} x) = x$	
$\tan^{-1}(\tan x) = x$	