



Air maths tuition

Interact, engage and perform

Inverse functions: Example 2

if $h: x \rightarrow e^{2x+1}$ find h^{-1}

$$\therefore h(x) = e^{2x+1}$$

let $x = e^{2y+1}$

$$\therefore \ln x = \ln e^{2y+1}$$

$$\therefore \ln x = (2y+1) \ln e$$

$$\therefore \ln x = 2y+1$$

$$\therefore \ln x - 1 = 2y$$

$$\therefore y = \frac{\ln x - 1}{2}$$

$$\therefore h^{-1}(x) = \frac{\ln x - 1}{2}$$

$$\therefore h^{-1}: x \rightarrow \frac{\ln x - 1}{2}$$

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