

Advanced Math

3-4
(Day 2)

Exponential and Logarithmic Equations

Solve.

$$\begin{aligned} 59) \quad \ln \sqrt{x+2} &= 1 \\ \ln(x+2)^{\frac{1}{2}} &= 1 \\ \frac{1}{2} \ln(x+2) &= 1 \\ \ln(x+2) &= 2 \\ e^2 &= x+2 \\ \{e^2 - 2\} &= x \\ \{5.389\} \end{aligned}$$

$$69) \quad \ln(x+5) = \ln(x-1) - \ln(x+1)$$

$$\begin{aligned} \ln(x+5) &= \ln\left(\frac{x-1}{x+1}\right) \\ x+5 &= \frac{x-1}{x+1} \\ (x+5)(x+1) &= x-1 \\ x^2 + 6x + 5 &= x-1 \\ x^2 + 5x + 6 &= 0 \\ (x+2)(x+3) &= 0 \end{aligned}$$

$$\{\cancel{-2}, \cancel{-3}\}$$

\emptyset

$$73) \quad 2 \ln x = 7$$

$$\begin{aligned} \ln x &= 3.5 \\ e^{3.5} &= x \\ \{33.115\} \end{aligned}$$

Assignment: pg 336 52-86 even, 87-90 all.
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