Bell Work

\[ \log 5x = 3 \quad \log x + \log x = 2 \]

\[ 6^{x^3} = 1296 \quad 1024^x = 4 \]

Mar 31-10:28 AM

The function, \( y = e^x \)

Has an inverse, the natural logarithm function

\[ \log_y x = y \quad \text{OR} \quad \ln_x y = y \]

just like \( \log \) we can rewrite it as \( e^y = x \)

Mar 31-9:26 AM

Simplifying a Natural Logarithmic Function

1) \( \ln 7 + 2 \ln 5 \)

2) \( 3 \ln x + 2 \ln y + \ln 5 \)

Apr 4-9:49 AM

Solve for \( x \)

2) \( \ln 2x + \ln 3 = 2 \)

3) \( 4e^{2x} + 2 = 16 \)

Apr 4-9:49 AM

Honors Algebra 3/4

I invested $36,000 in a savings account that pays an interest rate of 3.5% annually. How many years will it take me to have $50,000 in my account?

\[ 50,000 = 36,000(1.035)^t \]

\[ t \approx 9.6 \text{ years} \]

Apr 4-9:35 AM

Bob invested $76,000 in a savings account that pays an annual interest rate of 2.5% compounded continuously. How much would Bob have in his account after 13 years?

\[ A(t) = 76,000 e^{0.025t} \]

\[ t = 105,186.33 \]

Apr 4-10:12 AM
Wood is a sustainable, renewable, natural resource when you manage forests properly. Your lumber company has 1,200,000 trees. You plan to harvest 7% of the trees each year. How many years will it take to harvest half of the trees?

\[ 600,000 = 1,200,000 \times (0.93)^t \]

\[ t = 9.55 \text{ years} \]

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Solve for \( x \)

1) \( \log 4x = 3 \quad x = 250 \)

2) \( \log x = \log 3 + 8 \quad x = 300,000,000 \)

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Graph \( y = 3^{(x-2) + 1} \)

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Review Assignment / Homework:

Page 489  11-27 odds, 28, 29, 39-59 odds, 64, 65-71 odds

28) 6

64) about 18.2 hours