Precalc 11.6

Find natural logarithms of numbers
Solve equations and inequalities using natural logs
Solve applications with natural logs

natural logarithm

e

$\ln_e x$

$\text{antiln}_e x$

Whiteboards
Quiz 11.5-11.6 on Thurs.

Lesson 11-6 *(Pages 733–737)*

Evaluate each expression.

1. ln 35

2. ln 0.562

Convert each logarithm to a natural logarithm and evaluate.

4. $\log_{15} 10 = x$

5. $\log_3 14$

What base?

$\log 15^x = \log 10$

$x(2.7081) = 2.3026$

$x = 0.8503$

Use natural logarithms to solve each equation or inequality.

7. $5^x = 90$

8. $7^{x+2} = 5.25$

$(x+2)(1.9459) = 1.6582$

$1.9459x + 3.8918 = 1.6582$

$x = -1.1478$

$7^{0.8522} = 5.25$

10. $6e^x = 48$

$\frac{6}{6} \quad \frac{48}{6}$

$e^x = 8$

11. $50.2 < e^{0.2x}$

$3.9160 < 0.2x$

$19.5801 < x$

$y = e^{0.2x}$ (higher)

$y = 50.2$

12. $16 = 10(1 + e^x)$

Caution!

$1.6 = 1 + e^x$

$-1 \quad -1$

$\ln 0.6 = \ln e^x$

$-0.5108 = x(1)$

$16 = 10(1 + e^{-0.5108})$

$16 = 10 + 10e^x$

$6 = 10e^x$

$0.6 = e^x$

WB 11.6