

## Precalc 11.6

Find natural logarithms of numbers

Solve equations and inequalities using natural logs

Solve applications with natural logs

natural logarithm

$e$   $\rightarrow$  calculus

$\ln x$

$\text{anti}\ln x$

Whiteboards

Quiz 11.5-11.6 on Thurs.

**Lesson 11-6** (Pages 733–737)

Evaluate each expression.

1.  $\ln 35$

2.  $\ln 0.562$

$$e^{(\quad)} = 35$$

Convert each logarithm to a natural logarithm and evaluate.

What base?

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

5.  $\log_3 14$

$$\ln 15^x = \ln 10$$

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$$x (2.7081) = (2.3026)$$

$$x ( ) = ( )$$

$$x = 0.8503$$

Use natural logarithms to solve each equation or inequality.

7.  $5^x = 90$

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

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

$$x+2 = 0.8522$$

$$x = -1.1478$$

$$10. \frac{6e^x}{6} = \frac{48}{6}$$

$$\ln e^x = \ln 8$$

$$x(1) = 2.0794$$

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

$$e^{0.2x} > 50.2$$

$$0.2x(1) \geq 3.9512$$

$$x \geq 19.7562$$

$$19.7562 < x$$

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

*Caution!*

$$\cancel{16 = 10 + 10e^x}$$

$$1.6 = 1 + e^x$$

$$0.6 = e^x$$

$$-0.5108 = x$$

WB 11.6