



Natural Logarithms

Name: _____

Date: _____

Solve each equation for x .

1) $e^x = 3$

2) $e^x = 5$

3) $e^x = 7$

4) $\ln x = 8$

5) $\ln(\ln x) = 8$

6) $\ln(x + 3) = 7$

7) $\ln(2x + 2) = 4$

8) $\ln x = 2 \ln 4 + \ln 7$



Evaluate without using a calculator.

9) $\ln 1 =$

10) $\ln e^3 =$

11) $3 \ln e^2 =$

12) $5 \ln e =$

13) $e^{\ln \frac{5}{e}} =$

14) $e^{\ln 5} =$



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Answers



Solve each equation for x .

$$1) e^x = 3$$

$$x = \ln 3$$

$$2) e^x = 5$$

$$x = \ln 5$$

$$3) e^x = 7$$

$$x = \ln 7$$

$$4) \ln x = 8$$

$$x = e^8$$

$$5) \ln(\ln x) = 8$$

$$x = e^{e^8}$$

$$6) \ln(x + 3) = 7$$

$$x = e^7 - 3$$

$$7) \ln(2x + 2) = 4$$

$$x = \frac{e^4 - 2}{2}$$

$$8) \ln x = 2 \ln 4 + \ln 7$$

$$x = 112$$



Evaluate without using a calculator.

$$9) \ln 1 = 0$$

$$10) \ln e^3 = 3$$

$$11) 3 \ln e^2 = 6$$

$$12) 5 \ln e = 5$$

$$13) e^{\ln \frac{5}{e}} = \frac{5}{e}$$

$$14) e^{\ln 5} = 5$$



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