

Honors Algebra II/Trig
7.2 Natural Log Practice

Name Key

Write each equation in exponential form.

1. $\ln 8 = 2.08$

$$e^{2.08} = 8$$

2. $\ln 100 = 4.61$

$$e^{4.61} = 100$$

3. $\ln \frac{1}{3} = -1.10$

$$e^{-1.10} = \frac{1}{3}$$

4. $\ln \frac{1}{e^2} = -2$

$$e^{-2} = \frac{1}{e^2}$$

Write each equation in logarithmic form.

5. $e^3 = 20.1$

$$\ln 20.1 = 3$$

6. $e^7 = 1097$

$$\ln 1097 = 7$$

7. $e^{1/2} = 1.65$

$$\ln 1.65 = \frac{1}{2}$$

8. $\sqrt[3]{e} = 1.40$

$$e^{1/3} = 1.4$$

$$\ln 1.4 = \frac{1}{3}$$

Solve for x. Round to three decimal places.

9. $\ln x = 3$

$$e^3 = x$$

$$20.086 = x$$

10. $\ln \frac{1}{x} = 2$

$$e^2 = \frac{1}{x}$$

$$e^2 = x^{-1}$$

$$e^{-2} = x$$

$$.135 = x$$

11. $\ln(x-4) = -1$

$$e^{-1} = x-4$$

$$e^{-1} + 4 = x$$

$$4.368 = x$$

12. $3e^{2x} + 2 = 50$

$$3e^{2x} = 48$$

$$e^{2x} = 16$$

$$\ln 16 = 2x$$

$$1.386 = x$$

13. $\ln x^2 = 9$

$$e^9 = x^2$$

$$e^{9/2} = x$$

$$90.017 = x$$

14. $\ln \sqrt{x} = 3$

$$e^3 = x^{1/2}$$

$$e^6 = x$$

$$403.429 = x$$

Solve for x. Round to three decimal places.

15. $e^x = 2$

$$\ln 2 = x$$

$$.693 = x$$

16. $e^{-x} = 3$

$$\ln 3 = -x$$

$$-1.099 = x$$

17. $e^{2x} = 25$

$$\ln 25 = 2x$$

$$1.609 = x$$

18. $e^{3x} = 8$

$$\ln 8 = 3x$$

$$.693 = x$$

19. $e^{x-2} = 2$

$$\ln 2 = x - 2$$

$$2.693 = x$$

20. $\frac{1}{e^x} = 7$

$$e^{-x} = 7$$

$$\ln 7 = -x$$

$$-1.946 = x$$

21. $\sqrt{e^x} = 3$

$$e^{x/2} = 3$$

$$\ln 3 = \frac{x}{2}$$

$$2.197 = x$$

22. $e^{-2x} = 0.2$

$$\ln .2 = -2x$$

$$.805 = x$$

23. $(e^x)^5 = 1000$

$$e^{5x} = 1000$$

$$\ln 1000 = 5x$$

$$1.382 = x$$