

4.1 Worksheet D | Exponential Equations and the Natural Base e

1. Rounded to two decimal places, the number e is _____.

Simplify.

2. $e^3 e^{4x+5}$

3. $\frac{e^{5x+3} e^{x+9}}{e^{4x-1}}$

4. $\frac{e^{9x+2}}{e^{7x+1} e^{2x+6}}$

5. $(5e^7)(3e^4)$

□6. If $f(x) = 7e^{3x}$, what is $f(0.8)$? Round to three decimal places.

□7. If $g(x) = 3 + 2e^{x-5}$, what is $g(7)$? Round to three decimal places.

Solve for x . Do not use a calculator.

8. $e^{2x+1} e^4 = e^{27}$

9. $\frac{e^{4x-3}}{e^{x-10}} = e^{2x-3}$

6. $-\frac{1}{2}$ 7. -2 8. $\frac{9}{4}$ 9. -2 10. $-\frac{13}{2}$ 11. 3

Solve the equations. Do not use a calculator.

10. $8^{2+x} = 2^{x+5}$

11. $4^{2x+1} = 8^x$

12. $27^{2x-1} = 9^{x+3}$

13. $1,000^{3x+2} = 10,000^{x-1}$

14. $32^{x+2} = 8^{x-1}$

15. $6^{x+1} = 36^{x-1}$

1. Rounded to two decimal places, the number e is 2.72.

2. e^{4x+8} 3. e^{2x+13} 4. $\frac{1}{e^5}$ 5. $15e^{11}$ 6. 77.162 7. 17.778 8. 11 9. -10