Algebra 2

Name: POSTED KEY

Date: _____ Hour: _____

6.6 Worksheet C

Solve the exponential equation. Round the result to three decimal places if necessary.

1. $e^x = 18$

$x = \ln 18$

$x \approx 2.89$

2. $10^x = 350$

$x = \log 350$

$x \approx 2.544$

3. $e^{2x} = 42$

$x = \frac{\ln 42}{2}$

$x \approx 1.87$

4. $e^x + 3 = 8$

$x = \ln 5$

$x \approx 1.609$

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

$x = \frac{\log_5 8}{2}$

$x \approx .646$

6. $e^{3x} + 6 = 10$

$x = \frac{\ln 4}{3}$

$x \approx .462$

7. $e^{-x} - 6 = 1$

$x = -\ln 7$

$x \approx -1.946$

8. $4^{-2x} - 3 = 1$

$x = \frac{-1}{2}$

9. $3e^{-x} = 18$

$x = -\ln 6$

$x \approx -1.792$

10. $2e^{4x} = 5$

$x = \frac{\ln 2.5}{4}$

$x \approx .229$

11. $\frac{2}{3}e^{2x} = 12$

$x = \frac{\ln 18}{2}$

$x \approx 1.445$

12. $\frac{3}{8}(2^{3x}) + 1 = 10$

$x = \frac{\log_2 24}{3}$

$x \approx 1.528$

Solve the logarithmic equation. Round the result to three decimal places if necessary.

13. $\ln x = 5$

$x = e^5$

$x \approx 148.41$

14. $\log x = -2$

$x = \frac{1}{100}$

15. $\log_2 x = 1.5$

$x = 2^{1.5}$

$x \approx 2.828$

16. $7\ln x = 21$

$e^3 = x$

$x \approx 20.086$

17. $2\log x = 10$

$x = 100{,}000$

18. $7 + \log x = 4$

$x = \frac{1}{1000}$

19. $-3 + \ln x = 5$

$e^8 = x$

$x \approx 2980.958$

20. $3\log x + 1 = 13$

$x = 10{,}000$

21. $\log_3 3x = 2$

$x = 3$

22. $2 + \log_3 2x = -3$

$x = \frac{1}{486}$

23. $\log_2(x+2) = \log_2 3x$

$x = 1$

24. $\log_3(2x+1) = \log_3(x-4)$

NO SOLUTION

25. $\ln(5x-1) = \ln(3x+2)$

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

~~26.~~ $\log_2(x+12) + \log_2(x-3) = 2$