

**I. Solve each exponential equation. Keep answers as fraction, if not round to 3 decimal places.
Must show ALL of YOUR WORK to RECEIVE CREDIT!!**

1.) $\left(\frac{1}{2}\right)^{3-x} = 16$	2.) $-5e^{x+3} = -10$	3.) $64^x = 8^{2x+1}$	4.) $7^{x+2} = 3$
5.) $2e^{x-1} + 3 = -5$	6.) $125^{3x+1} \cdot 625^{-3x} = 125^{-3x}$	7.) $\frac{16}{3+e^{4x}} = 2$	8.) $243^{2x+2} \cdot 27^{-2x} = 9$
9.) $2^{-x} - 4 = 5$	10.) $36 \cdot \left(\frac{1}{6}\right)^{3-3x} = 216^{-2x-1}$	11.) $4e^{2x+3} - 1 = 11$	12.) $3^{-2-5x} + 5 = 5$

**II. Solve each logarithmic equation. Keep answers as fraction, if not round to 3 decimal places.
Must show ALL of YOUR WORK to RECEIVE CREDIT!! CHECK YOUR SOLUTION(S)!**

13.) $\log(3x+5) = 2$	14.) $2 - \ln(3-x) = 0$	15.) $\log_5(2-x) = 3$	16.) $\ln \sqrt{x+4} = 3$
17.) $\log_4(\ln x + 5) = 2$	18.) $\ln(2+x) - \ln(x-3) = 1$	19.) $2 \log x = \log 2 + \log(3x-4)$	20.) $\log_5\left(\frac{x+1}{x-1}\right) = 2$
21.) $\log(2x-3) = \log(3-2x) - \log x$	22.) $\log_6(x-5) + \log_6(x+3) = 1$	23.) $\ln(5x-3) = \ln(x-1)$	