

$$\log M + \log N = \log MN$$

12. Solve $\log_2(2x-7) + \log_2 x = 3$.

$$\log_2(2x^2-7x) = 3 \Rightarrow 2x^2-7x = 2^3$$

converted to exponential...

12. $x=4$

$$\Rightarrow 2x^2 - 7x = 8$$

$$2x^2 - 7x - 8 = 0$$

$$(2x+1)(x-4) = 0$$

$$x = \frac{1}{2} \quad x = 4$$

$$\log_2(2^{1/2}) - 7$$
$$= \log_2(-8)$$
$$(-7)$$

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

Solve $6^{n-2} = 50$. Round to the nearest ten-thousandth.

$$\ln 6^{n-2} = \ln 50 \quad \left\{ \begin{array}{l} (n-2)(\ln 6) = \ln 50 \\ \frac{(n-2)(\ln 6)}{\ln 6} = \frac{\ln 50}{\ln 6} \end{array} \right.$$

$$n - 2 = \frac{\ln 50}{\ln 6}$$

+2 +2

$$n = \frac{\ln 50}{\ln 6} + 2$$

OR 4.183

CHEMISTRY A particular compound decays according to the equation $y = ae^{-0.0825t}$, where t is in days. Find the half-life of this compound.

14. Solve $4^{3x+1} < 28$. Round to the nearest ten-thousandth.

$$(3x+1)(\log 4) < \log 28$$

$$3x+1 < \frac{\log 28}{\log 4}$$

$$x < \frac{\frac{\log 28}{\log 4} - 1}{3} = .467$$

For calculate
😊

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

15. Use common logarithms to approximate $\log_9 207$ to four decimal places.

$$\log_9 207 = \frac{\log 207}{\log 9} \quad \log_9 207 = x \quad \text{calc...}$$

15. _____

16. Suppose you deposit \$3000 in an account paying 2% annual interest, compounded continuously. Use $A = pe^{rt}$ to find the balance after 5 years.

$$A = 3000e^{(5 \times .02)}$$

$$A = 3000e^1$$

$$p = 3000$$

$$r = .02$$

$$t = 5$$

16. _____

19. CHEMISTRY A particular compound decays according to the equation $y = ae^{-0.0825t}$, where t is in days. Find the half-life of this compound.

$$\frac{1}{2}a = ae^{-0.0825t}$$

$$\ln \frac{1}{2} = \ln e^{-0.0825t}$$

$$\ln .5 = \frac{-0.0825t}{-0.0825}$$

$$t = \frac{\ln .5}{-0.0825}$$

19. _____

17. Solve $4 + 3e^{5x} = 27$.

$$\textcircled{17} \quad 4 + 3e^{5x} = 27$$
$$\begin{array}{r} -4 \\ \hline 3e^{5x} = 23 \end{array}$$

17. _____

18. Solve $\ln(x + 5) \geq 2$.

$$\frac{3e^{5x}}{3} = \frac{23}{3}$$

18. _____

$$\ln(e^{5x}) = \ln\left(\frac{23}{3}\right)$$

$$\frac{5x}{5} = \ln\left(\frac{23}{3}\right)$$



convert!!

18. Solve $\ln(x + 5) = 2$.

$$e^2 = x + 5$$

$$e^2 - 5 = x$$

$$x = e^2 - 5$$

~~$$x + 5 = 0$$~~

~~$$x = -5$$~~

~~$$x = -5$$~~



17. _____

18. _____