

# [Finite math assignment essay](https://assignbuster.com/finite-math-assignment-essay/)

1.)  Log10 2 = X  is equivalent to 10X = 2.

Since 101 = 10, then we know that X is between 0 and 1.  10. 5 = 3. 16, 10. 25 = 1. 78, 10.

3 = 1. 9953.  This is pretty close, so:    10. 31 = 2. 04,  10. 305 = 2.

012, 10. 301 = 1. 9999, 10. 30101 = 1. 99991  10. 30104 = 2.

00005   Therefore, to four decimal places, log10 2 = . 30102.)  ex = 1 + X/1! + X2/2! + X3/3! + … + Xn/n! + ….      e4 = 1 + 4/1! + 42/2! + 43/3! + … + 4n/n! + …      e4 = 1 + 4/1 + 16/2 + 64/6 + 256/24 + 1024/120 + 4096/720 + 16384/5040 +              65536/ 40320 + 256144/362280 + 1048576/3628800 + 4194304/39916800 +              16777216/479001600 + 67108864/6227020800 + 268435456/87178291200 +               1073741824/1307674368000 + 4294967296/20922789888000 +               17179869184/355687428096000 + 68719476736/6402373705728000      e4 = 1 + 4 + 8 + 10. 66667 + 10. 66667 + 8.

5333 + 5. 68889 + 3. 25079 + 1.

6254 +              . 70703 + . 28896 + . 10508 + . 03503 + .

01078 + 0. 00308 + . 00082 + . 00021 +              . 00005 + . 00001      e4 =  54.

58923.)  ln(23) = ln(2\*2\*2) = ln(2) + ln(2) + ln(2)   = 3 ln(2)       ln x = (x-1)/x + ½((x-1)/x)2 + 1/3((x-1)/x)3 + … +1/n((x-1)/x)n + …       ln 2 = (2-1)/2 + ½((2-1)/2)2 + 1/3((2-1)/2)3 + … +1/n((2-1)/2)n + …       ln 2 = ½  + ½(1/2)2 + 1/3(1/2)3 + … +1/n(1/2)n + …       ln 2 = . 5 + . 125 + . 04167 + .

01563 + . 00625 + . 0026 + . 00112 + . 00049 + . 00022 +                 .

0001 + . 00004 +. 00002 + . 000009       ln 2 = . 69314       3 ln 2  = 2. 0794       ln 8 = 2.

07944.)  S = Pert      r=. 12, S= 2P     2P= Pe. 12t     2= e. 12t     ln 2 = .

12t    . 69314 = . 12t     t = 5. 78 years5.)  P = (1000) e-0.

5t           a.)  t = 0 when first removed from the market, so:                  P = (1000) e-0. 5 (0)                  P = (1000) e0                  P = (1000) (1)                  P = 1000       b.

)  t= 5 years                  P = (1000) e-0. 5(5)                  P = (1000) e-2. 5                  P = (1000) (. 08208)                  P= 82. 08                  P = 82 Parts after 5 years6.)    N(t) = N0 e-.

056t         N0 = Original Amount, find time t to reach half of original amount         N(t)/N0 = e-. 056t         N(t)/N0 = . 5, since the amount left at time t is going to be half the original (N0)                           amount.         . 5 = e-. 056t         ln(. 5) = -. 056t         -. 6931 = -. 056t          t = 12. 3776          Therefore, Half life is 12. 3776 years.