$$lne^{6} = 6 - 7 lne^{6} = log_{0}0^{6} = 6$$
 $lne^{84} = 84$ 
 $e^{7} = e^{6}$ 
 $lne^{-7} = -7$ 
 $lne^{8} = 8$ 
 $log_{10}|0^{6} = 1$ 
 $log_{10}|0^{6} = 1$ 
 $log_{10}|0^{6} = 1$ 
 $log_{10}|0^{6} = 1$ 
 $log_{10}|0^{6} = 1$ 

$$C^{ln 8} = 8$$

$$C^{ln x} = \chi$$

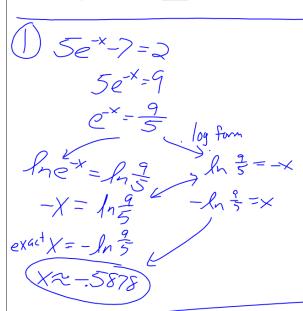
$$C^{ln(2x+1)} = 2\chi + 1$$

Since the natural base function and the natural logarithmic function are inverses, these two functions can be used to "undo" each other.

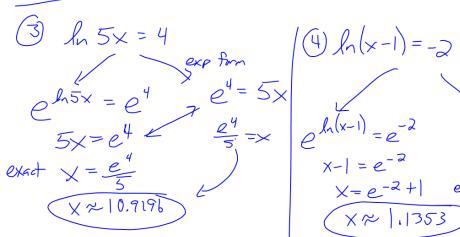
$$e^{\ln x} = \hat{x}$$

$$\ln e^x = x$$

For example  $e^{\ln 7} = 7 = 1 = 4x + 3$ .



2 
$$3e^{x} + 2 = 4$$
  
 $3e^{x} = 2$   
 $e^{x} = \frac{3}{3}$   $\log f_{mn}$   
 $\ln e^{x} = \ln \frac{3}{3} = x$   
 $x = \ln \frac{3}{3} = x$   
 $x = -\frac{4055}{3}$ 



$$| (4) ln(x-1) = -2$$

$$| exp. form$$

$$| exp.$$

When interest is compounded continuously, the amount A in an account after  $\underline{t}$  years is found using the formula  $A = Pe^{rt}$ , where P is the amount of principal and  $\underline{r}$  is the annual interest rate (as a decimal).

Suppose you deposit \$1000 in an account paying 2.5% annual interest, compounded continuously, what is the balance after 10 years? 15 years?

$$\begin{array}{ll}
H = Pe^{rt} \\
A = 1000 e^{.025(10)} \\
A = 1000 e^{.025(15)} & A = 1000 e^{(.025 \times 10)} \\
A = $1454.99 & A = $1284.05
\end{array}$$

9.5 Wkst-due tomorrow Midtern-due Thursday (5pts.)