

1. Let  $f(x) = e^x$ 
  - (a) Find the Maclaurin series for  $f(x)$
  - (b) Take the derivative of your series. What do you notice?
  
2. Let  $g(x) = \ln(x)$ .
  - (a) Find the Taylor series for  $g(x)$  at  $c = 1$
  - (b) Use your series to approximate  $\ln(2)$
  
3. Use the Taylor series for  $e^x$  to create the Taylor series for  $f(x) = e^{-x}$