solution

name

1. (4 pts.) Find the derivative of the following functions:

   a. $f(x) = \cos(3x)$

   $-3 \sin 3x$

   b. $h(x) = 2^x$

   $\ln 2 \; 2^x$

2. (5 pts.) Give the anti-derivative of the following functions:

   a. $\sin x$
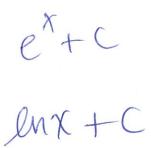
   $-\cos x + C$

   b. e^x

   $e^x + C$

   c. $1/x$

   $\ln x + C$

3. (3 pts.) Give the solution of the initial value problem which models deer population growth in Linn County:

   $P' = .16\,P$

   $P(0) = 6000$

   $P(t) = 6000 \cdot e^{.16t}$