For the week of November 10-14

1) Using known Taylor series, find the first four non-zero terms of the Taylor series for the following functions about $x = 0$.

   (a) $t\sin(3t)$

   (b) $\sinh(x) = \frac{e^x - e^{-x}}{2}$

   (c) z/e^{z^2}

   (d) $\cos(\theta^2)$

   (e) $\frac{1}{1-\ln(1+t)}$

2) For the following functions, find their full Taylor series about zero. You