EX.0.5.5, Sauer

Find the Taylor polynomial of degree 5 about the point $x = 0$ for the following functions:

$$(a)\ \ f(x) = e^{x^2} \quad (b)\ \ f(x) = \cos(2x) \quad (c)\ \ f(x) = \ln(1 + x) \quad (d)\ \ f(x) = \sin 2x$$