Chain Rule

1. Find $f'(x)$ for the following functions:
   (a) $f(x) = (x^3 + 4x)^7$
   (b) $f(x) = 4\sec(5x)$
   (c) $f(x) = \tan(\cos(x))$
   (d) $f(x) = e^{\sin(3x)}$
   (e) $f(x) = \sin(\sqrt{1 + x^2})$
2. Find the slope of the normal line to $f(x) = e^{x^2+1}$ at $x = 1$.
3. If a particle has moved $f(t) = (t^2 - t - 30)^4$ after t seconds, when is the particle at rest?