4. (12 points) Suppose that f, g and h are all continuous and differentiable functions such that:

   - f is an odd function
   - $\int_0^3 f(t)dt = 3$
   - $g(t) = t^2 + 2$
   - $h(t) = g'(t-1)$

   Evaluate the following, where possible. If evaluation is not possible, simply state "insufficient information."

   (a) $\int_{a+3}^{a+3} f(t)\,dt = 0$

   (b) $\int_{-10}^{10} f(t)\,dt = 0$ (since f is odd)

   (c) The average value of g on the interval $[-2, 2]$

$$\frac{1}{4}\int_{-2}^{2}(t^2+2)dt = \frac{1}{4}\left(\frac{t^3}{3}+2t\right)\Big|_{-2}^{2} = \frac{10}{3}$$

   (d) $\int_{-3}^{0} f(t)\,dt = -3$

   (e) $\int_{-1}^{1} h(t)\,dt = g(0) - g(-2) = 2 - (4+2) = -4$