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

(b) $\int_{-10}^{10} f(t)\, dt$

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

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

(e) $\int_{-1}^{1} h(t)\, dt$