

4. (2 points each—no partial credit) Suppose $\int_a^b f(x)dx = 2$ and $\int_a^b g(x)dx = 6$. Evaluate the following expressions, if possible. If the expression cannot be evaluated with what is given, simply indicate "Insufficient information." Assume that all functions are continuous on the interval $[a, b]$.

(a) $\int_a^b (g(x))^2 dx - \left(\int_a^b g(x) dx\right)^2$

(b) $\int_a^a (h(x)) dx$

(c) $\int_{a+2}^{b+2} f(x-2) dx$

(d) $\int_a^b (f(x)g(x)) dx$

(e) $\int_b^a (g(x)) dx$