Name _____

Homework 19
Section 5.4

1. (2ea) Let $\int_a^b f(x)\,dx = 5$, $\int_a^b g(x)\,dx = 3$, $\int_a^b (f(x))^2\,dx = 9$, and $\int_a^b (g(x))^2\,dx = 7$. Evaluate the following integrals:

   (a) $\int_a^b (f(x) + g(x))\,dx$

   (b) $\left(\int_a^b f(x)\,dx\right)^2 - \int_a^b (f(x))^2\,dx$

   (c) $\int_a^b 6g(z)\,dz$

   (d) $\int_a^b f(t)\,dt - \int_b^a f(x)\,dx$

2. (3ea) You are given that $f(x)$ is an even function, $g(x)$ is an odd function, $\int_{-2}^{5} f(x)\,dx = 5$, $\int_{0}^{2} f(x)\,dx = 1$, and $\int_{2}^{5} g(x)\,dx = 4$. Compute each of the following.

   (a) $\int_{-2}^{5} g(x)\,dx$

   (b) $\int_{-5}^{2} g(-x)\,dx$

   (c) $\int_{-5}^{5} g(x)\,dx$

   (d) $\int_{-5}^{5} f(x)\,dx$