

Name _____

Homework 34
section 5.4

1. (2ea) Let $\int_a^b f(x) dx = 4$, $\int_a^b g(x) dx = 3$, $\int_a^b (f(x))^2 dx = 5$, 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. (4ea) 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) $\int_{-2}^5 f(-x) dx$

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