

8. (3 points each) Let

$$\bullet \int_a^b f(x)dx = 8, \text{ and } \int_a^b (f(x))^2 dx = 12,$$

$$\bullet \int_a^b g(t)dt = 2, \text{ and } \int_a^b (g(t))^2 dt = 3.$$

Evaluate the following integrals, if the value can be determined. If there is information missing, clearly state what is missing.

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

(b)  $\int_a^b cf(z)dz$ , for  $c$  a constant

(c)  $\int_a^b (f(x))^2 - g(x^2))dx$

9. (6 points) Find  $\int_2^5 f(x)dx$ , if  $\int_2^5 (3f(x) + 4)dx = 18$ .