

1. Given that  $\int_2^6 f(x) = 10$      $\int_6^8 f(x) = 2$      $\int_2^6 g(x) = -2$ , find:

(a)  $\int_2^6 f(x) + g(x) =$

(b)  $\int_6^2 f(x) =$

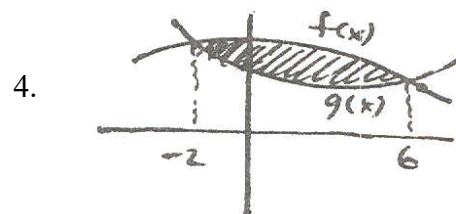
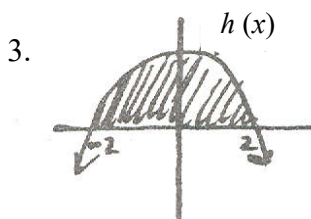
(c)  $\int_3^3 g(x) =$

(d)  $\int_2^6 6g(x) =$

(e)  $\int_2^8 f(x) =$

In 2 – 4, set up the integral only.

2. The area under the curve  $f(x) = 25 - x^2$  and above the  $x$ -axis.



5. Find the area of the region bounded by  $f(x) = 2x + 1$  and  $g(x) = 4 - x^2$ .

6. Find the area of the region bounded by  $y = x^2$ ,  $x = 0$ ,  $x = 1$ , and  $y = 0$ .

7. Use integration by parts.

$$\int \frac{\ln x}{x^2} dx$$

8. Use integration by parts.

$$\int x^2 e^{-x} dx$$

9. Integrate by substitution.

$$\int x \sqrt{3x^2 - 1} dx$$

10. Evaluate the definite integral.  
Integrate by substitution.

$$\int_1^2 \frac{x dx}{3x^2 - 2}$$