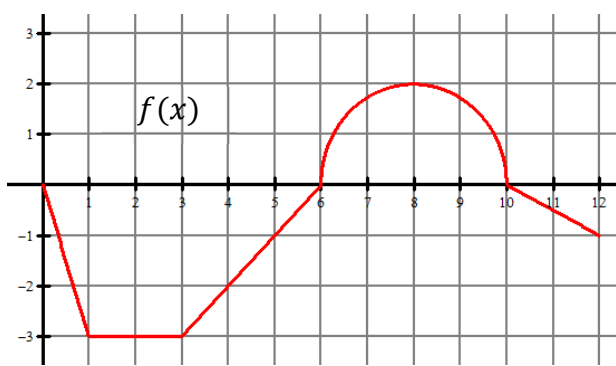| The graph of *f* consists of line segments and a semicircle. Evaluate each definite integral. |
1.

a. $\int_0^6 2f(x)\,dx =$

b. $\int_{10}^{12} f(x)\,dx =$

c. $\int_{10}^6 f(x)\,dx =$
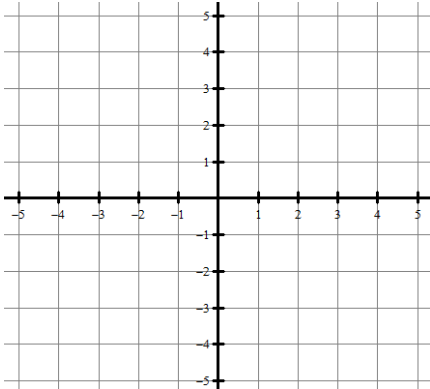
d. $\int_0^{12} f(x)\,dx =$
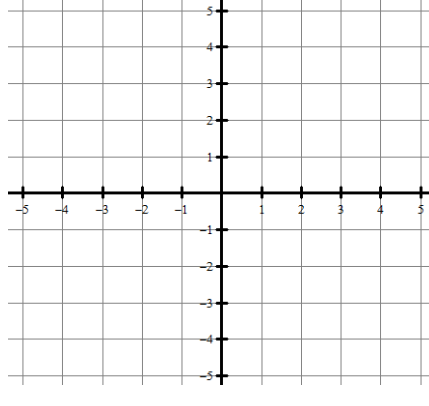
e. $\int_8^8 f(x)\,dx =$

f. $\int_3^5 3f(x)\,dx =$

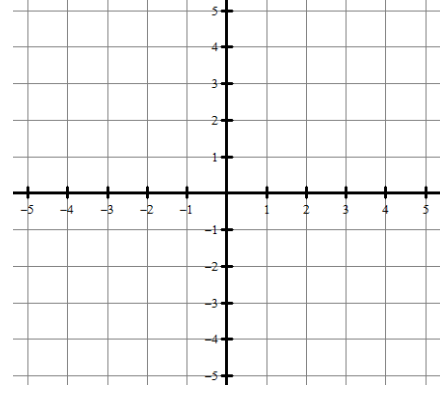| Sketch a graph of the definite integral. Evaluate the integral with a graphing calculator. |

2. $\int_{-1}^3 \left(\frac{x}{3} - 2\right) dx =$

3. $\int_0^2 (x^2 - 1)\,dx =$

4. $\int_{-1}^4 \sqrt{x + 3}\,dx =$

| Let *f* be a continuous functions that produces the following definite integral values. |

$$\int_{-2}^1 f(x)\,dx = 5 \text{ and } \int_{-2}^5 f(x)\,dx = 8$$

Find the following.

5. $\int_1^{-2} f(x)\,dx =$

6. $\int_{-2}^1 [-f(x)]\,dx =$

7. $\int_1^5 f(x)\,dx =$

| Let *f* be a continuous functions that produces the following definite integral values. |

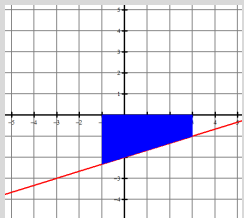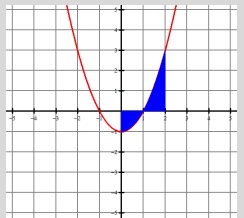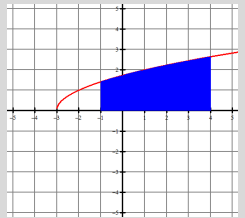$$\int_{-6}^{-2} f(x)\,dx = -3 \text{ and } \int_{-6}^4 f(x)\,dx = 2$$

Find the following.

8. $\int_{-2}^4 f(x)\,dx =$

9. $\int_{-2}^{-6} f(x)\,dx =$

10. $\int_{-6}^4 5f(x)\,dx =$

1. a. -24	2. $-6.\overline{6}$	3. $0.\overline{6}$	4. 10.461	5. -5
b. -1				6. -5
c. -2π				7. 3
d. $2\pi - 13$				8. 5
e. 0				9. 3
f. -12				10. 10