

Graph the integrand and use areas to evaluate the integral.

1)  $\int_2^4 (2x + 8) dx$

Solve the problem.

2) Suppose that  $\int_4^6 f(x) dx = -4$ . Find  $\int_4^4 f(x) dx$  and  $\int_6^4 f(x) dx$ .

A) -4; 4

B) 0; -4

C) 4; -4

D) 0; 4

3) Suppose that  $\int_3^4 f(x) dx = 7$ . Find  $\int_3^4 6f(x) dx$  and  $\int_3^4 -f(x) dx$ .

A) 6; -7

B) 42;  $\frac{1}{7}$

C) 42; -7

D) 13; 7

4) Suppose that  $f$  and  $g$  are continuous and that  $\int_7^{11} f(x) dx = -2$  and  $\int_7^{11} g(x) dx = 9$ .

Find  $\int_7^{11} [5f(x) + g(x)] dx$ .

A) 35

B) 43

C) 14

D) -1

Evaluate the definite integral.

$$5) \int_1^3 2x^3 \, dx$$

$$6) \int_1^3 4x^{-2} \, dx$$

$$7) \int_{-\pi/2}^{\pi/2} \cos x \, dx$$

Find the average value over the given interval.

$$8) y = x^2 - 2x + 4; [0, 8]$$

$$9) y = \frac{6}{x}; [1, e]$$