

Rules for Definite Integrals: Extra Practice

1. Let $\int_1^2 f(x)dx = -3$, $\int_1^5 f(x)dx = 5$, and $\int_1^5 g(x)dx = 9$. Find:

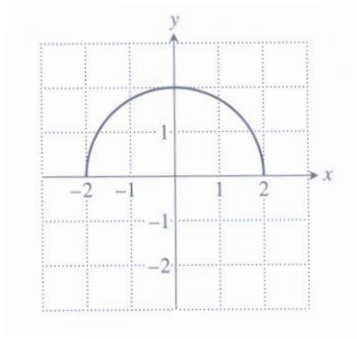
a) $\int_2^5 g(x)dx$

b) $\int_1^2 (3f(x) + 1)dx$

c) $\int_2^5 f(x)dx$

2. If $f(x)$ is continuous on $[1,3]$ and $2 \leq f(x) \leq 4$, what is the greatest possible value of $\int_1^3 f(x)dx$?

3. The graph of f is the semicircle shown below. Let g be the function given by $\int_0^x f(t)dt$.
What is the value of $g(-2)$?



4. Suppose that h is continuous and that $\int_{-1}^1 h(r)dr = 0$ and $\int_{-1}^3 h(r)dr = 7$. Find:

a) $\int_1^3 h(r)dr$

b) $-\int_3^1 h(r)dr$

MULTIPLE CHOICE

5. If $f(x)$ is continuous on the interval $a \leq x \leq b$ and $a < c < b$, then $\int_c^b f(x)dx$ is equal to

(A) $\int_a^c f(x)dx + \int_c^b f(x)dx$

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

(C) $\int_c^a f(x)dx + \int_b^a f(x)dx$

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

(E) $\int_a^c f(x)dx - \int_b^c f(x)dx$