

Graph each integrand and use the area to evaluate each integral.

1) $\int_{-2}^4 2 dx$

2) $\int_0^4 \frac{1}{2}x - 2 dx$

3) $\int_{-5}^5 \sqrt{25 - x^2} dx$

Suppose that f and g are continuous functions and that $\int_1^2 f(x) dx = 3$, $\int_2^1 g(x) dx = -6$, $\int_1^5 f(x) dx = -4$.

4) $\int_1^2 g(x) dx =$

5) $\int_2^2 f(x) dx =$

6) $\int_1^2 g(x) + f(x) dx =$

7) $\int_2^5 f(x) dx =$

8) $\int_1^2 3g(x) dx =$

9) $\int_2^1 g(x) - f(x) dx =$

10) The graph of $f'(t)$ is graphed below. The function f is defined at $f(x) = \int_{-1}^x f'(t) dt$. Find each of the following.

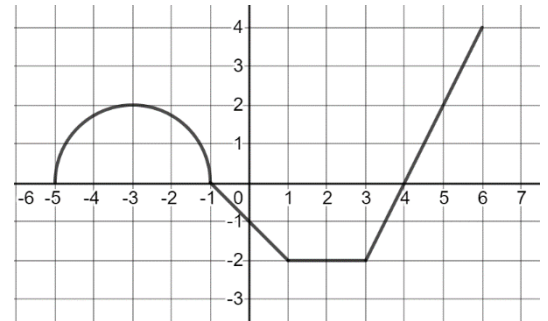
a) $f(-5) =$

b) $f(-1) =$

c) $f(1) =$

d) $f(4) =$

e) $f(6) =$



Fish leave the lake at a rate modeled by $L(t) = 4 + 2^{0.1t^2}$, where $L(t)$ is measured in fish per hour, and t is measure in hours since midnight.

11) Find $L(1)$ and explain what it means in the context of the problem.

12) Find $L'(1)$ and explain what it means in the context of the problem.

13) Find $\int_0^5 L(t) dt$ and explain what it means in the context of the problem.

14) Find $\frac{1}{5} \int_0^5 L(t) dt$ and explain what it means in the context of the problem.