6.7 Definite Integrals

Calculus

Name: _____

Find the value of the definite integral.

1. $\int_1^4 \left(\frac{1}{\sqrt{x}} - x^2 \right) dx$

2. $\int_{-1}^2 (3x - 10x^4 - 1) \, dx$

3. $\int_1^2 \left(2x + \frac{1}{x^3} \right) dx$

4. $\int_0^\pi (\sin x - 1) \, dx$

5. $\int_{-\pi}^\pi (\cos x + 4) \, dx$

Use the given information to find the value of the function.

6. If $f'(x) = 6 - x$ and $f(5) = -7$, then $f(2) =$

7. Let $g(x)$ be an antiderivative of $2x + 3x^2 - 1$. If $g(1) = 2$, then $g(5) =$

8. Let f be a differentiable function such that $f(0) = 2$ and $f'(x) = \sin x$. What is the value of $f(\pi)$?