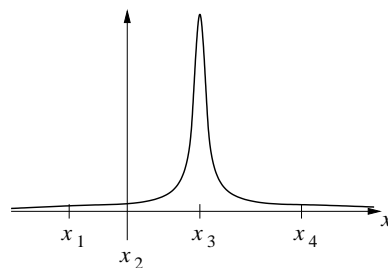


1. Suppose that $f(x)$ is an odd function and that $\int_{-2}^5 3f(x) + 2 dx = 23$. **(a)** What is $\int_2^5 f(x) dx$? **(b)** A passing calculus fan asserts that $f(x) \geq 1$ for $2 \leq x \leq 5$; given the information in this problem, is this assertion correct? (4 points)

2. Suppose that $f''(x)$ is graphed in the figure to the right. Sketch graphs of $f'(x)$ and $f(x)$, indicating on your graphs the locations of the points x_1, x_2, x_3 and x_4 . (3 points)



3. Find each of the following:

(a) $\int 3x^3 - 4\sqrt[3]{x} dx$

(b) $\int \sin(2y) - \frac{1}{\cos^2(y)} dy$

(c) $\int \frac{(z-1)^2}{z^2} dz$ (3 points)