Name: _____

Show your work. Answers without work earn reduced credit.

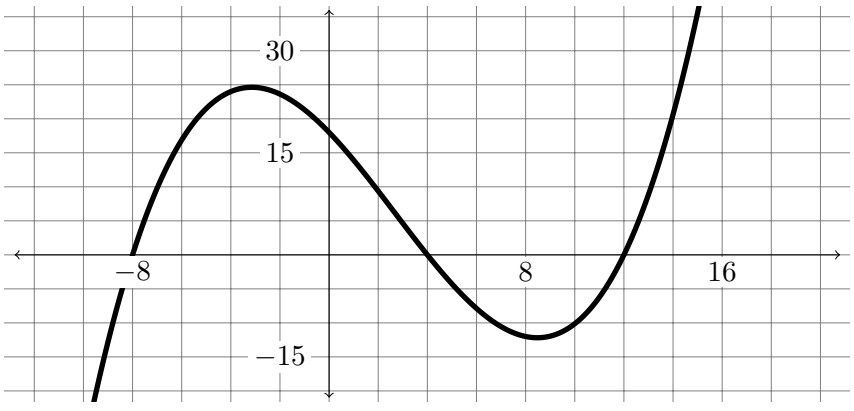
1. [**3 parts, 1 point each**] Consider the definite integral $\int_0^6 x^2\,dx$.

   (a) Find the Left Hand Sum with $n = 3$.

   (b) Find the Right Hand Sum with $n = 3$.

   (c) Average the LHS and the RHS to obtain an estimate of the value of the integral.

2. [**2 points**] Use the graph of $f(t)$ to estimate the value of the integral $\int_{-8}^{12} f(t)\,dt$.



3. [**3 points**] The velocity of a car is $f(t) = 7t$ meters per second. Use a graph of $f(t)$ to find the exact distance traveled by the car, in meters, from $t = 0$ to $t = 6$ seconds.

4. [**2 parts, 1 point each**]

   (a) Draw the graphs of $y = x^2$ and $y = 3 - 2x$ between $x = -3$ and $x = 3$.

   (b) Express the area between $y = x^2$ and $y = 3 - 2x$ between $x = -3$ and $x = 1$ as a definite integral. (You should not find the value of this integral.)