Quiz 1
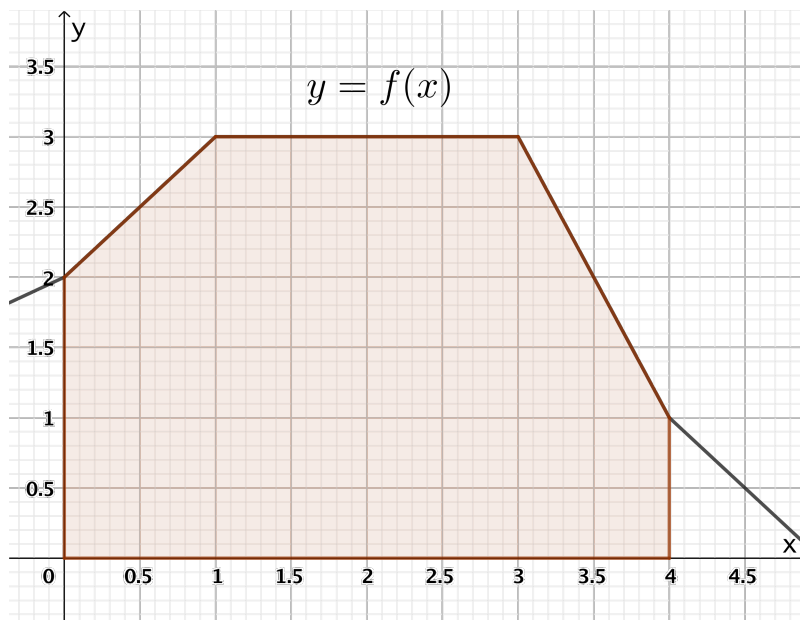
The quiz is (typically) 1 or 2 pages for a total of 20 points. This quiz has two pages.

1. Evaluate.   (4 pts.)

$$\int \left(\frac{3}{\sqrt{x}} - 2x \right)^2 \, dx$$

2. Use a lower sum estimate to approximate the area $\int_0^4 f(x) \, dx$, with $n = 8$ rectangles, shown in the figure below. Be sure to be clear in your work how you got your answer.   (5 pts.)

3. Evaluate the indefinite integral $\int \left(3\sec^2(x) - \dfrac{4}{x} - \dfrac{1}{1+x^2} \right) \, dx.$ (5 pts.)

4. Find the limit of the Riemann sum below using any method. (6 pts.)

$$\sum_{i=1}^{n} \frac{2}{n} \left(3\left(1 + \frac{2i}{n} \right)^2 - 4 \right)$$