- 1. If f(x) is concave up on the interval [a, b], how does the average value of f on that interval compare to the quantity $\frac{f(a) + f(b)}{2(b-a)}$? Explain. (4 points)
- 2. Calculate the average value of $f(x) = \sqrt{x+1}$ on the interval [1,5]. (4 points)

Quiz #3

3. Find the work done if a force of $F(x) = \sqrt{x+1}$ (in newtons) is applied to an object located at x = 1 and moves it to x = 4 (x measured in meters).

4. Find the centroid of the region in the *xy*-plane bounded by x = 0, y = 0, and $y = 16 - x^2$. (4 points)

5. Set up the form of the partial fractions expansion of the rational function $\frac{x}{x^3 + x^2 + x + 1}$ but do not actually compute the coefficients. (4 *points*)