Group Work 1

1. Approximate the area under the curve $y = x$ from $x = 0$ to $x = 2$ by dividing the interval from $[0, 2]$ into 4 subintervals of equal length and using four approximating rectangles. Use the value of the function $f(x) = x$ at the right hand endpoints of the subintervals for the heights of your rectangles.

2. (a) Repeat problem 1, but now approximate the area using $n$ approximating rectangles instead of 4. Your answer will be a function of $n$.

(b) Find the exact area of the region in question by taking the limit as $n \to \infty$. Compute the area of the region in question by computing it as the area of a triangle.