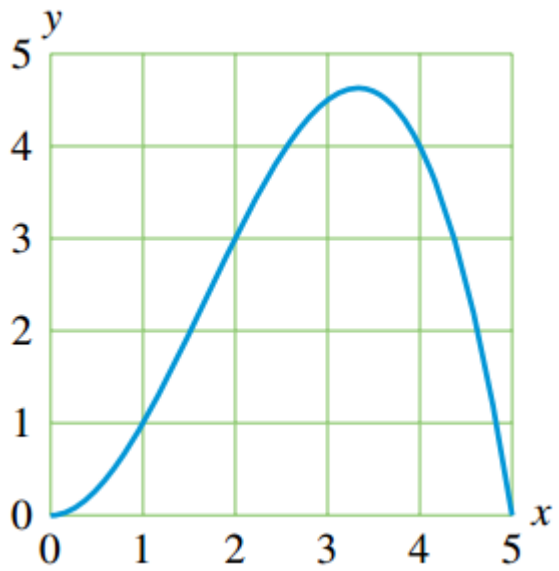
Name:_____Date:_____Period:____

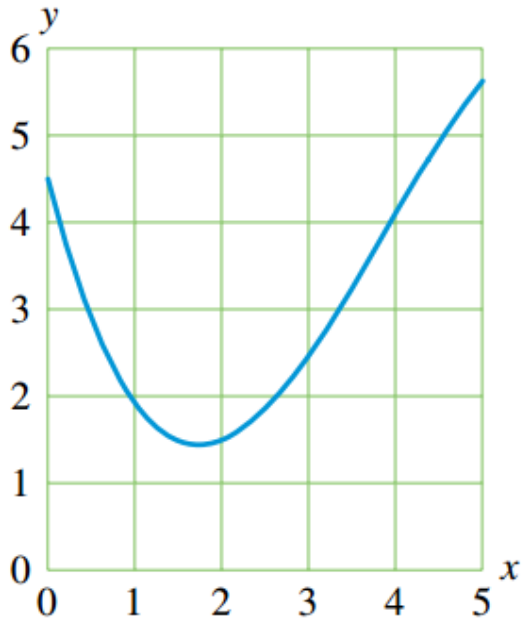
Area and Integrals Practice Handout Day 2 (Show all Work)

In numbers 1-2, estimate the area of the region above the *x*-axis and under the graph of the function from $x=0$ to $x=5$

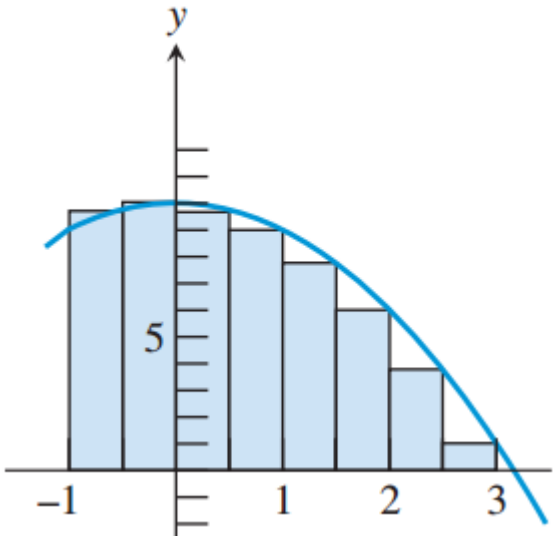
1)



2)



3) Use the 8 rectangles shown to approximate the area under the function $f(x)=10-x^2$ over the interval $[-1, 3]$



4) Complete each of the following for:

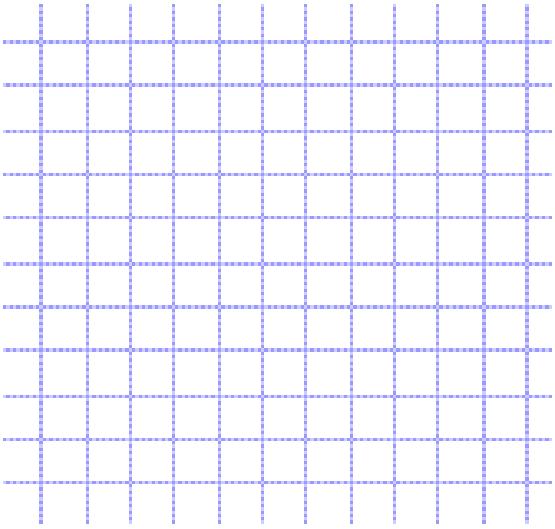
$$f(x) = x^2 + 2;\ [0, 6];\ 6 \text{ subintervals}$$

(a) Draw the graph of the function for x in the specified interval. Verify that the function is nonnegative in that interval.

(b) On the graph in part (a), draw and shade the approximating rectangles for the RRAM using the specified partition. Compute the RRAM area estimate without using a calculator.

(c) Repeat part (b) using the LRAM.

(d) Average the RRAM and LRAM approximations from parts (b) and (c) to find an average estimate of the area.



Find the definite integral by computing the area (draw the graph)

5) $\int_1^4 (3x-2)\,dx$

6) $\int_{-2}^{2} \sqrt{4-x^2}\,dx$

7) $\int_0^6 \sqrt{36-x^2}\,dx$