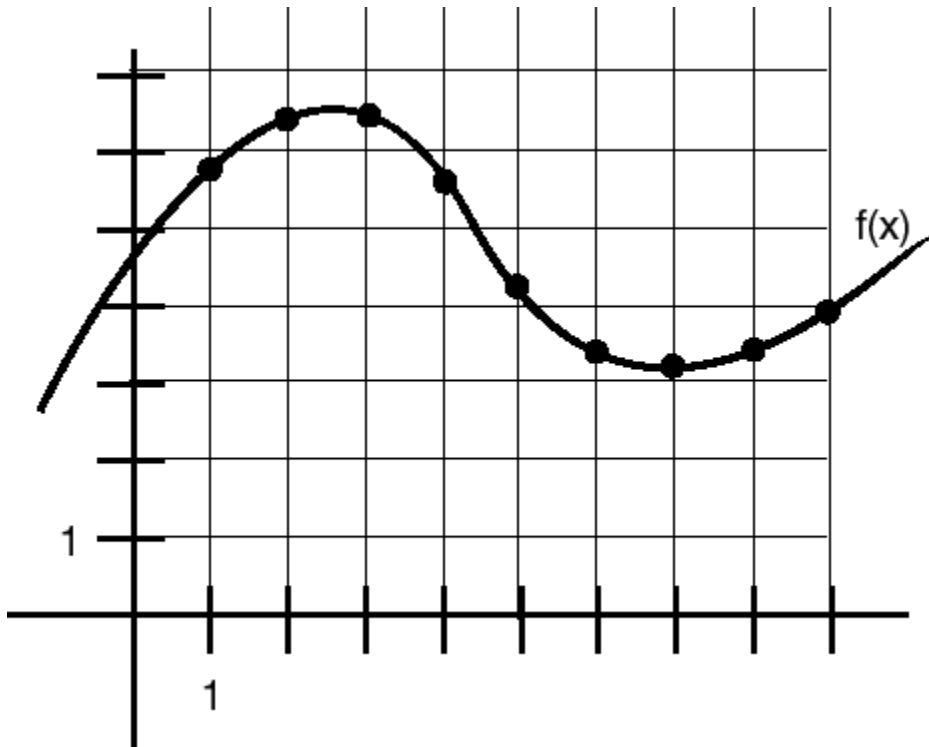


## Riemann Sums

NAME: \_\_\_\_\_

We are interested in estimating the area under the curve  $f(x)$  shown below. We will do this by the method of Riemann Sums.

1. We will estimate the area under the curve from  $x = 0$  to  $x = 9$ . Notice the points  $(x, f(x))$  where  $x$  is an integer are marked with big dots. **For each one of these dots**, draw a **horizontal** segment over to the vertical line directly to its left. These segments complete rectangles (width equals 1) formed by the positive  $x$ -axis and the vertical lines drawn in the graph. Shade in these rectangles. Notice how this shaded area closely resembles the area under the curve. We say this shaded area estimates the area under the curve of  $f(x)$ .



We will assume that each little square of the graph represents one square unit (like a square inch). Now, to get an estimate of the area under the curve, we add the areas of these skinny rectangles. (Round to the nearest quarter unit.) Use the table below to organize these areas. (You should have nine skinny rectangles.)

Rectangle	1	2	3	4	5	6	7	8	9
Area									

What is the total area? Again, notice this area estimates the area under the curve of  $f(x)$  [and above the  $x$ -axis] from  $x = 0$  to  $x = 9$ .