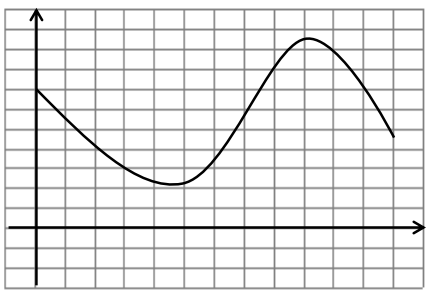
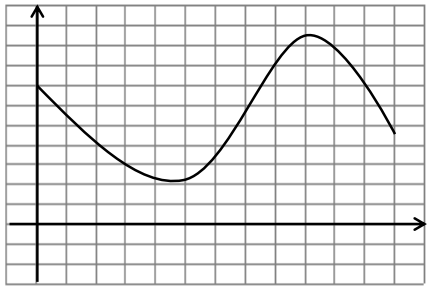
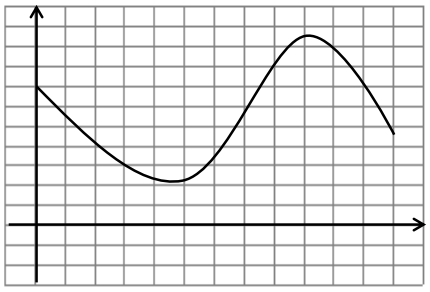
Notes: Approximating The Area Under a Curve: Integration Day 2

We can approximate area by making rectangles. We can use right endpoints, left endpoints, or midpoints of these rectangles.

Example 1: Estimate the area under the curve . (Some answers may differ if you are given a picture and asked for an estimate.)

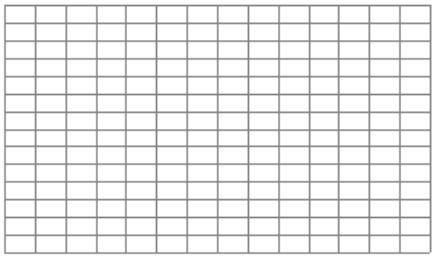
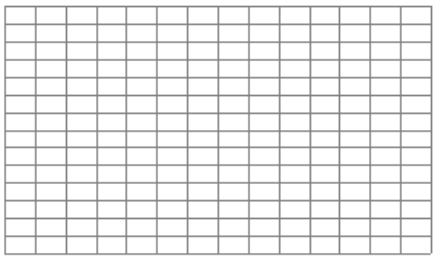
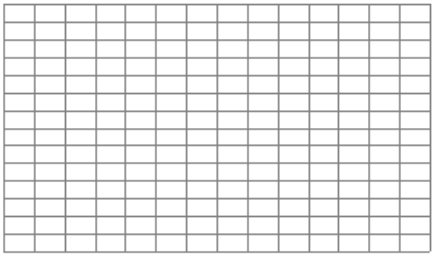
A. R_4 B. L_8 C. M_4

Example 2: Estimate the area given the table. (These answers may not be different)
Compute R_6, L_6, & M_3 to estimate the distance traveled over the [0,3] if the velocity at half second intervals is as follows.

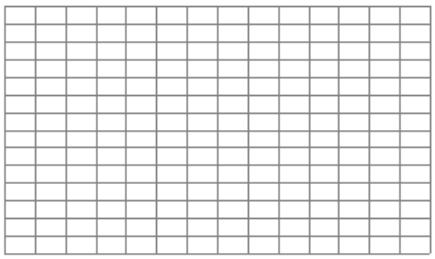
t(s)	0	.5	1	1.5	2	2.5	3
v(ft./s)	0	5	15	20	15	10	5

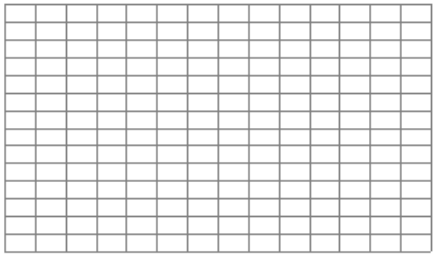
A. R_6 B. L_6 C. M_3

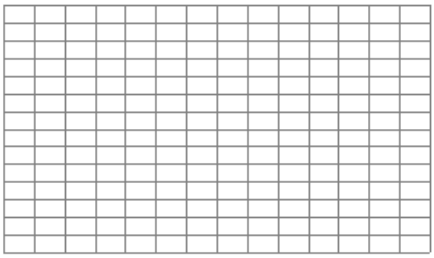




Example 3: Estimate the area given the function. (These answers may not be different)
Let $f(x) = -x^2 + 4$, [0, 2]

A. R_4 B. L_4 C. M_2

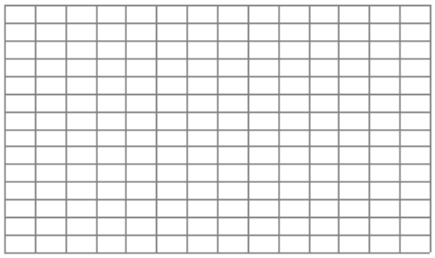






Example 4: Estimate the area given the function. (These answers may not be different)
Let $f(x) = \ln x$, [1, 2]

M_6



Example 4: Estimate the area given the function. (These answers may not be different)
Let $f(x) = \sin x$, $[0, \pi]$

R_4