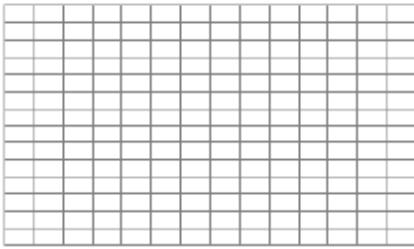


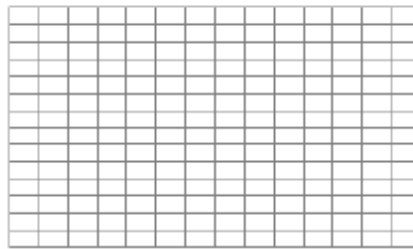
## 5.1 Riemann Sums – Additional Examples

1. Estimate the area given  $f(x) = -x^2 + 4, [0,2]$

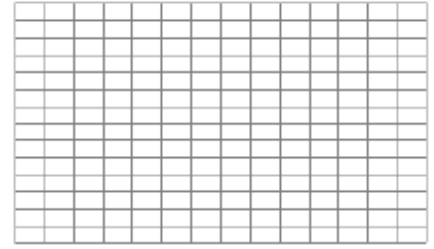
A.  $R_4$



B.  $L_4$



C.  $M_2$



Problems 2-5: Given below is a table of function values  $h(x)$ . Approximate each of the following integrals using the indicated Riemann or Trapezoidal sum, using the indicated subintervals of equal length.

$x$	-3	-1	1	3	5	7	9
$h(x)$	5	2	-3	-7	-2	6	11

2.  $\int_{-3}^1 h(x)dx$  using two subintervals and a LRS

3.  $\int_{-3}^9 h(x)dx$  using three subintervals and a RRS

4.  $\int_{-3}^9 h(x)dx$  using three subintervals and a Midpoint Riemann Sum.

5.  $\int_{-3}^3 h(x)dx$  using three subintervals and a Trapezoidal sum.

6. The graph of  $g$  consists of two straight lines and a semicircle. Use it to evaluate each integral.

a.  $\int_0^2 g(x)dx$

b.  $\int_2^6 g(x)dx$

c.  $\int_0^7 g(x)dx$

