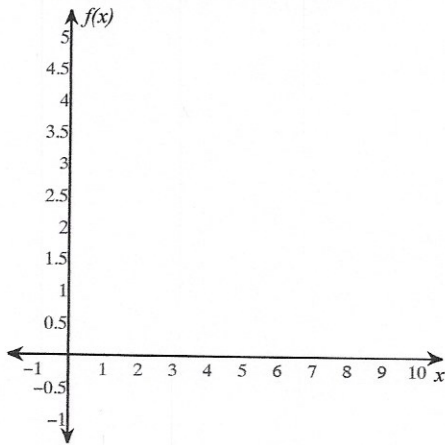


For each problem, use a left-hand Riemann sum to approximate the integral based off of the values in the table. You may use the provided graph to sketch the function data and Riemann sums.

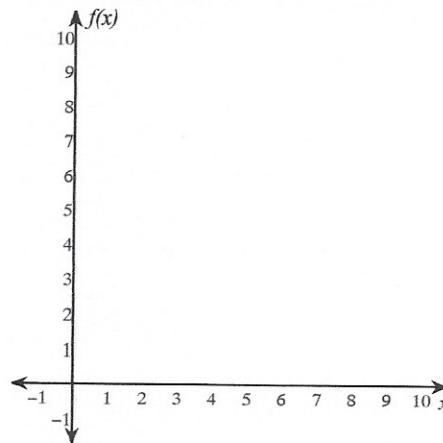
1)  $\int_0^{10} f(x) dx$

$x$	0	2	5	7	10
$f(x)$	3	4	2	3	2



2)  $\int_0^{10} f(x) dx$

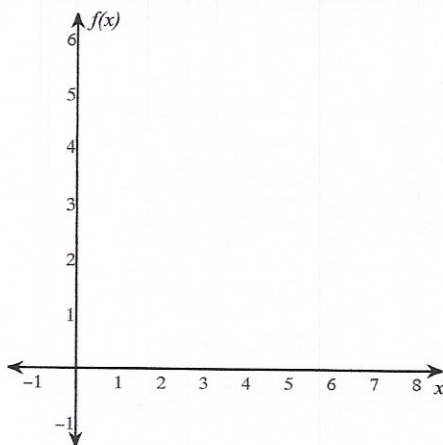
$x$	0	5	7	9	10
$f(x)$	5	3	5	7	9



For each problem, use a right-hand Riemann sum to approximate the integral based off of the values in the table. You may use the provided graph to sketch the function data and Riemann sums.

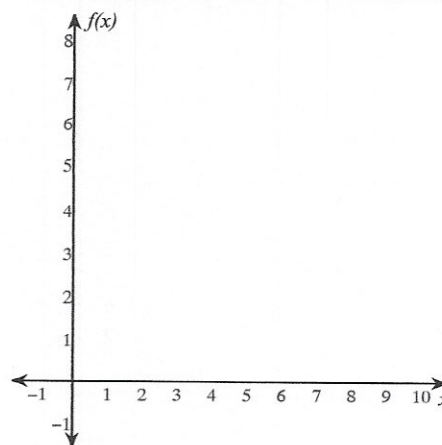
3)  $\int_0^8 f(x) dx$

$x$	0	2	3	4	5	8
$f(x)$	2	3	2	4	5	3



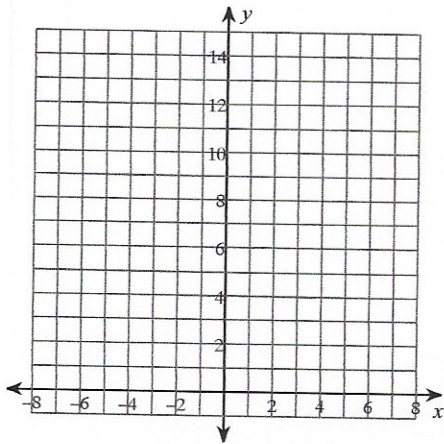
4)  $\int_0^{10} f(x) dx$

$x$	0	3	4	8	9	10
$f(x)$	7	5	6	4	6	7

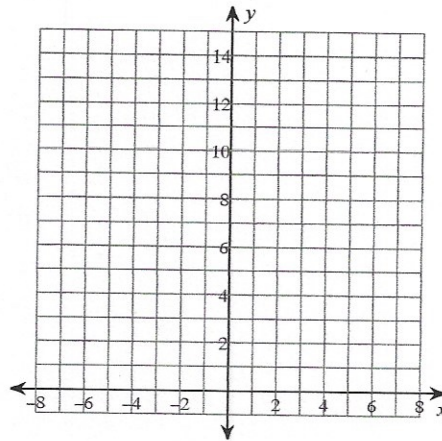


For each problem, approximate the area under the curve over the given interval using 4 left endpoint rectangles. You may use the provided graph to sketch the curve and rectangles.

5)  $y = x + 5$ ;  $[2, 6]$

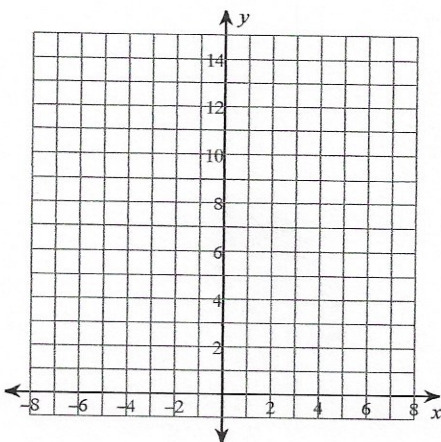


6)  $y = -\frac{x}{2} + 4$ ;  $[-1, 7]$

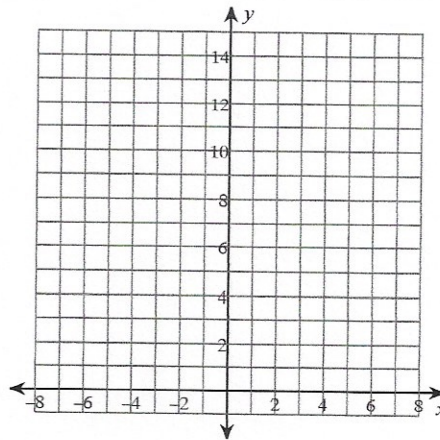


For each problem, approximate the area under the curve over the given interval using 4 midpoint rectangles. You may use the provided graph to sketch the curve and rectangles.

7)  $y = -\frac{x}{2} + 4$ ;  $[-4, 4]$



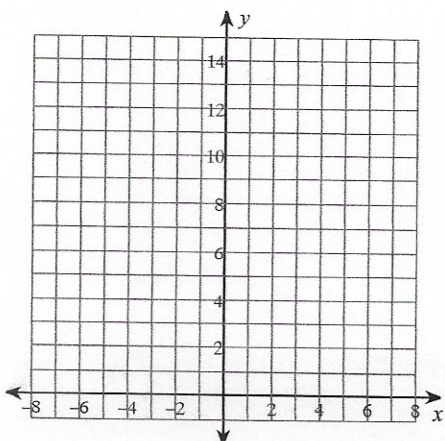
8)



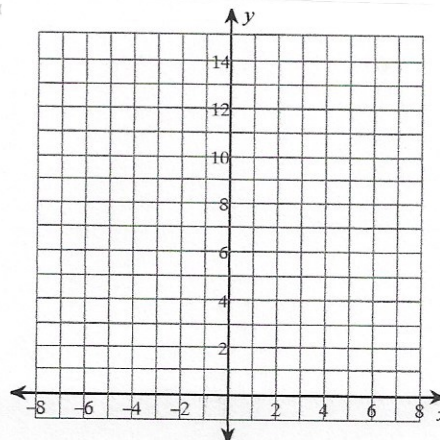
x	y
-2	5
-1	7
0	8
1	10
2	11
3	10
4	8
5	5
6	2

For each problem, approximate the area under the curve over the given interval using 5 trapezoids. You may use the provided graph to sketch the curve and trapezoids.

9)  $y = \frac{x}{2} + 4$ ;  $[1, 6]$



10)



x	y
-4	5
-2	7
1	10
6	11
8	16
9	20