Numerical Integration

1. Consider the following table of values of $f(x)$:

x	0	1	2	3	4	5	6	7	8
$f(x)$	5	1	3	2	4	7	9	10	9

Approximate $\int_0^8 f(x)\,dx$ using the stated method.

(a) Right Riemann sum with 8 equal subintervals

(b) Left Riemann sum with 8 equal subintervals

(c) Trapezoid Rule with 8 equal subintervals

(d) Right Riemann sum with 4 equal subintervals

(e) Left Riemann sum with 4 equal subintervals

(f) Midpoint Rule with 4 equal subintervals

(g) Trapezoid Rule with 4 equal subintervals

(h) Right Riemann sum with 2 equal subintervals

(i) Left Riemann sum with 2 equal subintervals

(j) Midpoint Rule with 2 equal subintervals

(k) Trapezoid Rule with 2 equal subintervals

2. Consider the following table of values of $f(x)$:

x	0	2	3	6	9	11	15
$f(x)$	4	1	2	-2	4	6	10

Approximate $\int_0^{15} f(x)\,dx$ using the stated method.

(a) Right Riemann Sum with 6 intervals

(b) Left Riemann Sum with 6 intervals

(c) Trapezoid Rule with 6 intervals

(d) Midpoint Rule with 3 intervals