CH. 4 4.6 HW Approximating Area Name_____ Per._____

1) To estimate the surface area of his backyard, a man takes several measurements. The measurements are taken every 3 feet for the 36 ft. long yard, where y represents the distance across the yard at each 3 ft. increment.

x	0	3	6	9	12	15	18	21	24	27	30	33	36
y	9	11	8	13	16	10	12	11	14	15	13	11	8

Estimate each Area using 12 subdivisions

a) Use Trapezoidal Rule

b) Estimate Avg. value using Trapezoidal Rule

c) Use Right Endpoint

d) Use Left Endpoint

e) Use 6 Midpoint subdivisions

2) Given $f(x)=\sqrt{x^2+1}$ Approximate Area using 3 subdivisions from $[0,12]$.

a) Use Trapezoidal Rule

b) Estimate Avg. value using Trapezoidal Rule

c) Use Midpoint subdivisions

d) Use calculator to find actual Area

3) To estimate the surface area of a pool, a surveyor takes several measurements. The measurements are taken every 5 feet for the 40 ft. long pool, where y represents the distance across the pool at each 5 ft. increment.

x	0	5	10	15	20	25	30	35	40
y	0	12	15	13	16	18	17	15	9

Estimate each Area using 8 subdivisions

a) Use Trapezoidal Rule

b) Use Right Endpoint

c) Use Left Endpoint

d) Use 4 Midpoint subdivisions

e) Estimate Avg. value using Midpoint

x	0	2	3	6	11	14
y	25	29	32	24	27	30

4) Estimate each Area using 5 unequal subdivisions

a) Use Trapezoids

b) Estimate Avg. value using Trapezoids

c) Use Right Endpoint

d) Use Left Endpoint