MATH 178 Sec. 7.5 – EXTRA PROBLEMS

(1) APPROXIMATE $\int_0^2 \frac{8}{x^2+4}\,dx$ USING $n=4$ AND

A) THE MIDPOINT RULE,

B) THE TRAPEZOIDAL RULE.

C) SIMPSON'S RULE,

(ROUND OFF ANSWERS TO 4 DECIMAL PLACES.)

(2) APPROXIMATE $\int_0^4 \frac{10}{\sqrt{x^3+1}}\,dx$ USING $n=4$ AND

A) THE MIDPOINT RULE,

B) THE TRAPEZOIDAL RULE.

C) SIMPSON'S RULE.

(ROUND OFF ANSWERS TO 4 DECIMAL PLACES.)

(3) THE SPEED OF A CAR IN FT/SEC AFTER T SEC IS GIVEN BY THE FOLLOWING TABLE:

T	0	5	10	15	20	25	30
$\lvert v(t)\rvert$	0	24	42	60	72	82	90

APPROXIMATE THE TOTAL DISTANCE TRAVELED BY THE CAR IN THE FIRST 30 SECONDS USING

A) THE TRAPEZOIDAL RULE.

B) SIMPSON'S RULE.

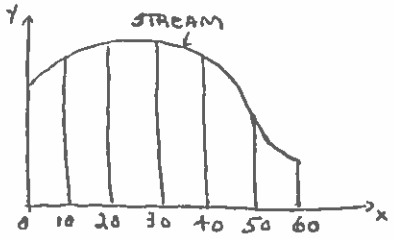
(ROUND OFF ANSWERS TO THE NEAREST FOOT.)

(4) A LOT IS BOUNDED BY TWO PERPENDICULAR ROADS AND A STREAM. USING THE LENGTHS (MEASURED IN FT) GIVEN BELOW, ESTIMATE THE AREA OF THE LOT USING

A) THE TRAPEZOIDAL RULE.

B) SIMPSON'S RULE.

(ROUND OFF ANSWERS TO THE NEAREST INTEGER.)



x	0	10	20	30	40	50	60
y	54	60	64	69	62	48	25

(5) FIND THE SMALLEST VALUE OF n REQUIRED TO GUARANTEE THAT THE ERROR IN APPROXIMATING $\int_1^3 \frac{1}{x+4}\,dx$ IS AT MOST 10^{-5} USING

A) THE TRAPEZOIDAL RULE,

B) THE MIDPOINT RULE,

C) SIMPSON'S RULE,