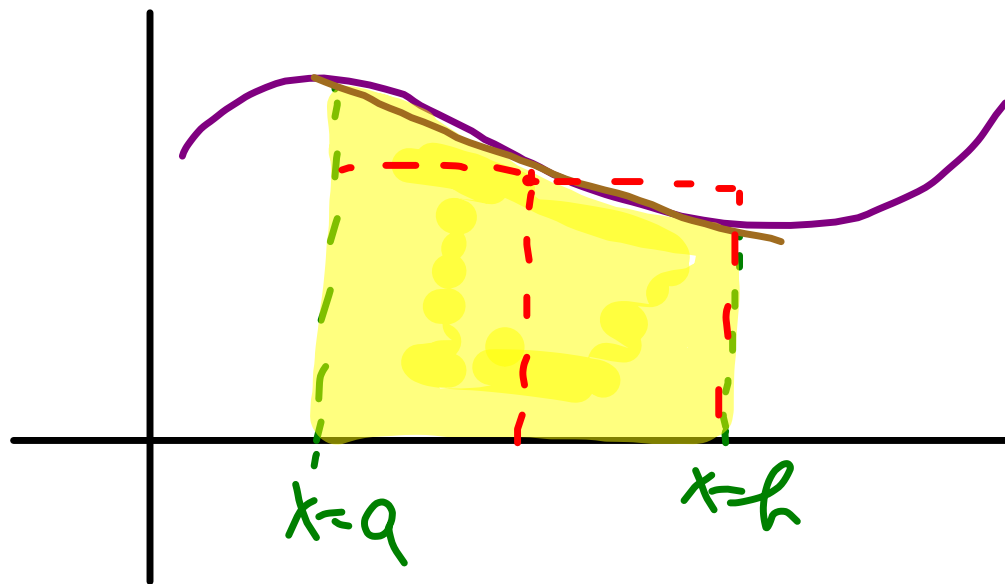


MON 01-30-06

- COLLECT CORRECTED TESTS
- PASS UP INDIVIDUAL AP PROBLEMS FROM FRIDAY
- PASS BACK SOLNS. TO AP. # 4 p. 121  
\* PARTS g, h, c ONLY

# CHAP. 5

FIND THE AREA BETWEEN A CURVE  
AND THE X-AXIS.



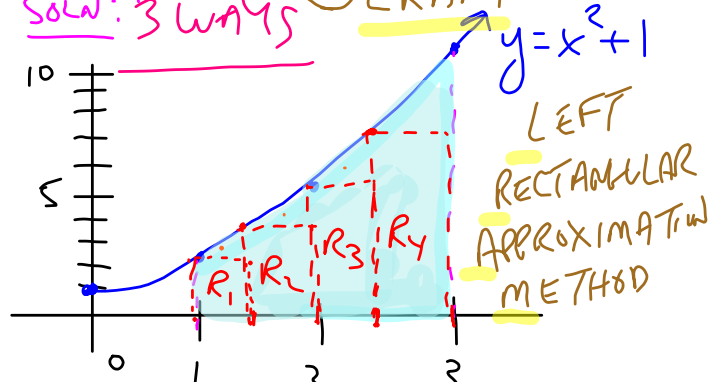
BY APPROX.

A. TRAB.

RIEMANN Sum

APPROX.  
 Ex) Find the area between the curve:  $f(x) = x^2 + 1$  and the x-axis over  $[1, 3]$ .

SOLN: 3 ways ① LRAM - 4 RECT.



SUBINTERVAL:	$[1, 1\frac{1}{2}]$	$[1\frac{1}{2}, 2]$	$[2, 2\frac{1}{2}]$	$[2\frac{1}{2}, 3]$
LEFT ENDPT	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
HEIGHT	2	$2\frac{1}{4}$	5	$7\frac{1}{4}$
AREA OF RECT.	$\frac{1}{2} \cdot 2 = 1$	$\frac{1}{2} \cdot 2\frac{1}{4} = \frac{5}{4}$	$\frac{1}{2} \cdot 5 = \frac{5}{2}$	$\frac{1}{2} \cdot 7\frac{1}{4} = \frac{29}{4}$

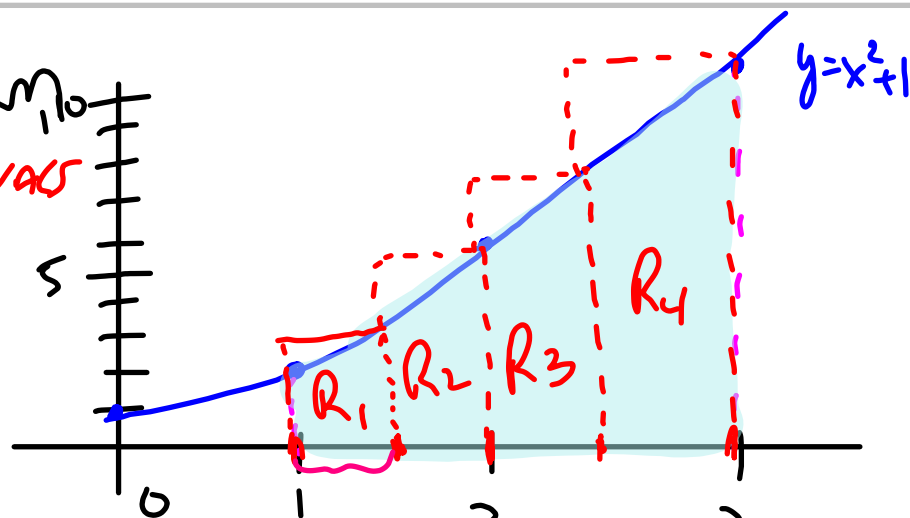
$$LRAM = 1 + \frac{5}{4} + \frac{5}{2} + \frac{29}{4}$$

$$= \frac{8}{8} + \frac{10}{8} + \frac{20}{8} + \frac{58}{8}$$

$$LRAM = \frac{70}{8} = \frac{35}{4} \text{ SQ. UNITS (Too low)}$$

## PART 2 RRAM<sub>10</sub>

4 SUBINTERVALS



INTERVAL     $[1, \frac{3}{2}]$      $[\frac{3}{2}, 2]$      $[2, \frac{5}{2}]$      $[\frac{5}{2}, 3]$

Area:

$$b \cdot h \\ \frac{1}{2} \cdot \frac{13}{4} + \frac{1}{2} \cdot 5 + \frac{1}{2} \cdot \frac{29}{4} + \frac{1}{2} \cdot 10$$

RRAM =

$$\frac{13}{8} + \frac{5}{2} + \frac{29}{8} + 5$$

RRAM =

$$\frac{13 + 20 + 29 + 40}{8} = \frac{102}{8} = \frac{51}{4} \text{ SQ. UNITS}$$

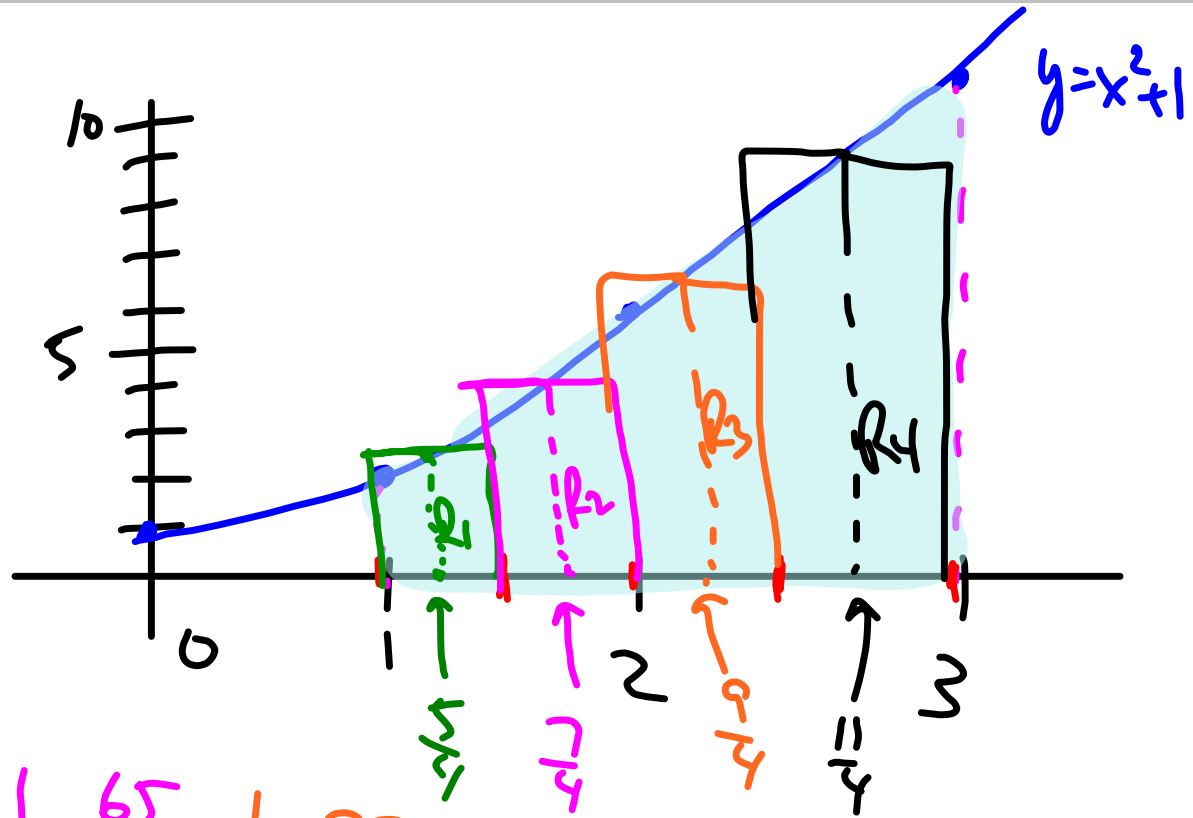
TOO BIG

PART 3

MRAM

"MIDPOINT"

4 INTERVALS



$$\text{Area: } \frac{1}{2} \cdot \frac{41}{16} + \frac{1}{2} \cdot \frac{65}{16} + \frac{1}{2} \cdot \frac{97}{16} + \frac{1}{2} \cdot \frac{137}{16}$$

$$\text{MRAM} = \frac{41 + 65 + 97 + 137}{32} = \frac{340}{32} = \frac{85}{8} \text{ sq. units}$$

FIND THE AREA BETWEEN:

$y = x^2 + 2$  & THE X-AXIS OVER THE INTERVAL:

$[0, 2]$ .

USE: 4 SUBINTERVALS

LRAM, RRAM, MRAM (3 PARTS,  
3 GRAPHS)

AP YELLOW 25-28