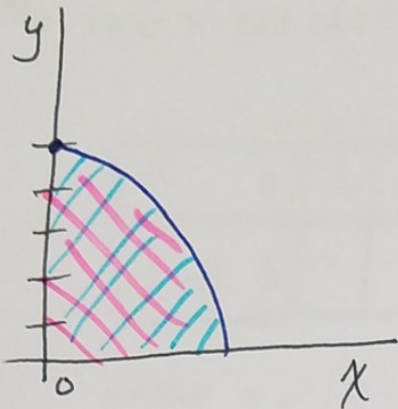


Riemann Sums

RRAM
LRAM
MRAM



EX 1) $f(x) = 5 - x^2$ for $[0, 2]$
 $n = 5$ SUBINTERVALS

FIND LRAM AND RRAM

WIDTH = $\frac{\text{LENGTH OF INTERVAL}}{\# \text{ OF SUBINTERVALS}}$

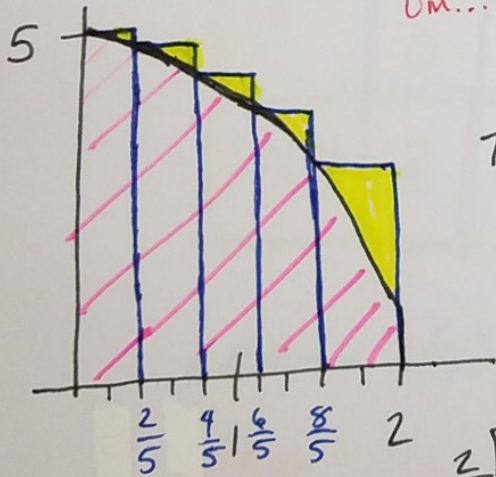
$$\frac{2-0}{5} = \frac{2}{5}$$

LRAM

UM... NOT 2 SCALE



TIME FOR A TABLE.



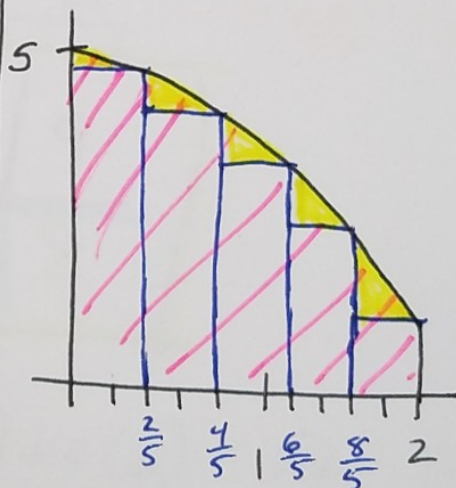
x	$5 - x^2$	$f(x)$
0	$5 - (0)^2$	5
$\frac{2}{5}$	$5 - (\frac{2}{5})^2$	$\frac{121}{25}$
$\frac{4}{5}$	$5 - (\frac{4}{5})^2$	$\frac{109}{25}$
$\frac{6}{5}$	$5 - (\frac{6}{5})^2$	$\frac{89}{25}$
$\frac{8}{5}$	$5 - (\frac{8}{5})^2$	$\frac{61}{25}$

$$\frac{2}{5} \left[\frac{125}{25} + \frac{121}{25} + \frac{109}{25} + \frac{89}{25} + \frac{61}{25} \right]$$

$$\frac{2}{5} \left(\frac{505}{25} \right)$$

$$\frac{202}{25}$$

RRAM



x	$5 - x^2$	$f(x)$
$\frac{2}{5}$	$5 - (\frac{2}{5})^2$	$\frac{121}{25}$
$\frac{4}{5}$	$5 - (\frac{4}{5})^2$	$\frac{109}{25}$
$\frac{6}{5}$	$5 - (\frac{6}{5})^2$	$\frac{89}{25}$
$\frac{8}{5}$	$5 - (\frac{8}{5})^2$	$\frac{61}{25}$
2	$5 - 2^2$	1

$$\frac{2}{5} \left[\frac{121}{25} + \frac{109}{25} + \frac{89}{25} + \frac{61}{25} + \frac{25}{25} \right]$$

$$\frac{2}{5} \left(\frac{405}{25} \right)$$

$$\frac{162}{25}$$

Do Subintervals HAVE to be equal?

No, THEY DO NOT. ^{NOT} BUT YOU DO CHANGE PROCESS.

2 2 2 2 2 2 → ALL THE SAME

X	0	2	4	6	8	10	12
f(x)	3	7	19	39	67	103	147

NOT REALLY #1 pg. 4

$$L_{RAM} = 2(3) + 2(7) + 2(19) + 2(39) + 2(67) + 2(103) = 476$$

$$R_{RAM} = 2(7) + 2(19) + 2(39) + 2(67) + 2(103) + 2(147) = 764$$

2 1 4 2 → NOT THE SAME

X	0	2	3	7	9
f(x)	3	6	7	6	8

$$L_{RAM} = 2(3) + 1(6) + 4(7) + 2(6) = 52$$

$$R_{RAM} = 2(6) + 1(7) + 4(6) + 2(8) = 59$$

Do. #1 Pg 4 PLEASE.

	4		4		4		
x	0	2	4	6	8	10	12
f(x)	3	7	19	39	67	103	147

LRAM: $4(3) + 4(19) + 4(67) = 356$

RRAM: $4(19) + 4(67) + 4(147) = 932$

MIRAM: $4(7) + 4(39) + 4(103) = 596$

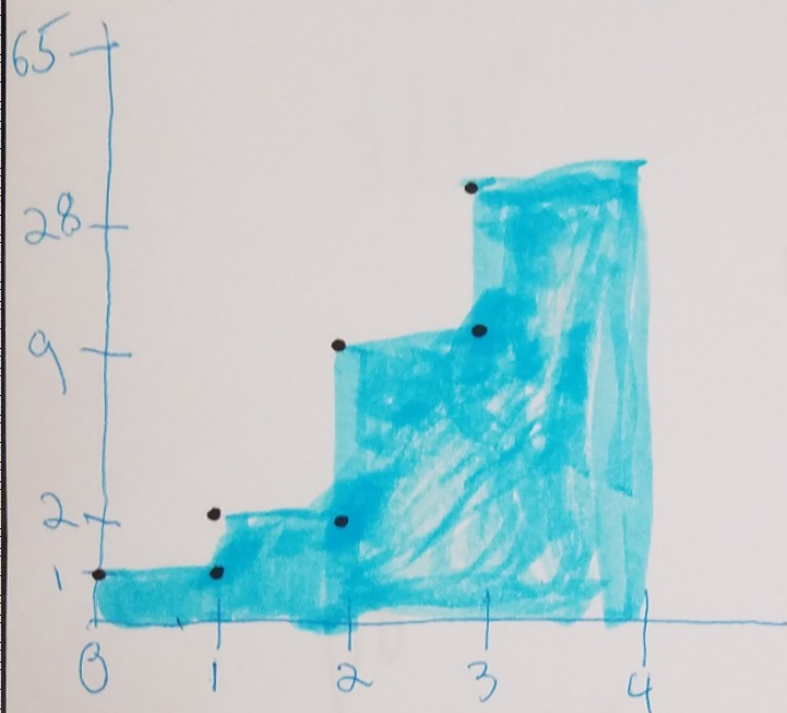
hello ☺
Mr. Ruger
happy halloween

Do #2 Pg 4 PLEASE

$$y = x^2 + 1$$

LRAM

$$x^3 + 1$$



$$1(1) + 1(2) + 1(9) + 1(28) = 1 + 2 + 9 + 28 = 40$$

Ex: $y = x^2$ $[0, 2]$

Definite Integral $\int_0^2 x^2 dx = \frac{1}{3} x^3 \Big|_0^2$

$$\frac{1}{3} (2)^3 - \frac{1}{3} (0)^3$$

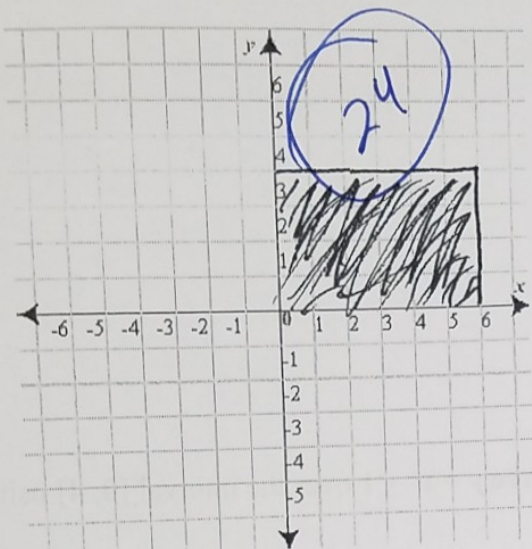
$$\frac{8}{3} - 0 = \frac{8}{3}$$

$$\int_a^b f(x) dx = F(b) - F(a)$$

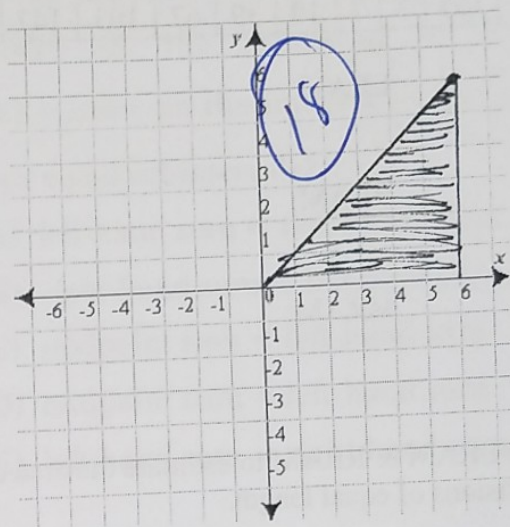
Calculus Notes
Area Under a Curve

Find the area of the shaded regions shown below.

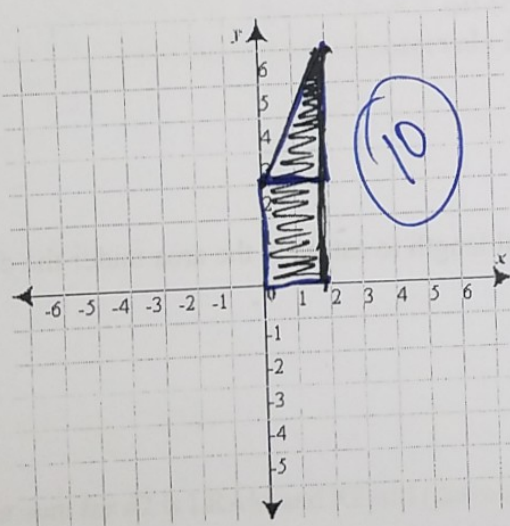
1)



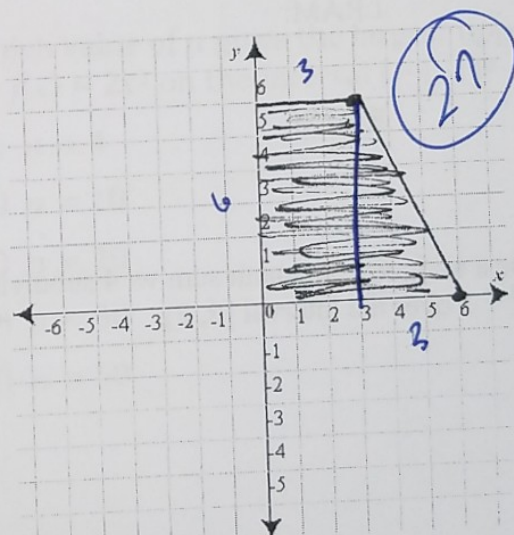
2)



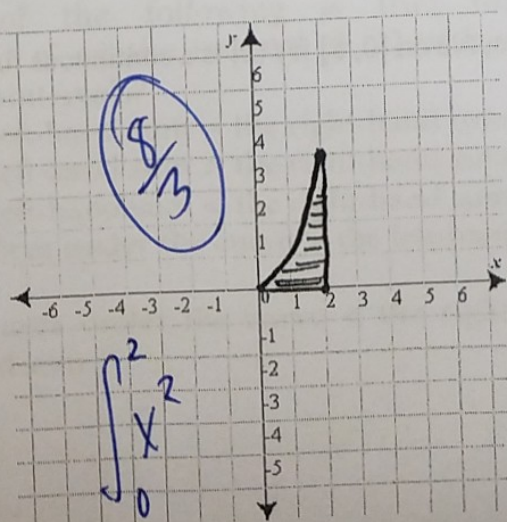
3)



4)



5)



6)

