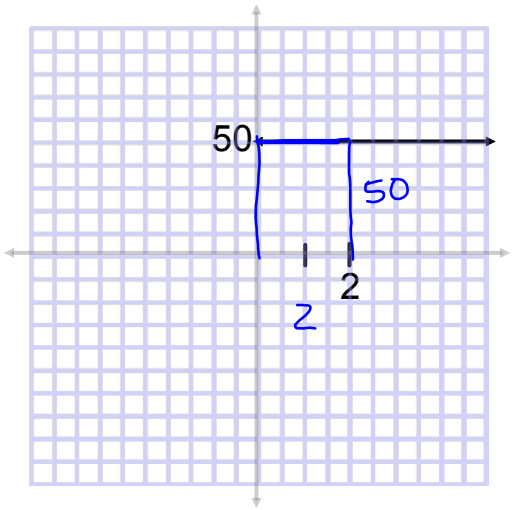
5.1a Estimating with finite Sums

Find the area under the curve:

if a car is driving 50 mph for 2 hrs, how far has it gone?

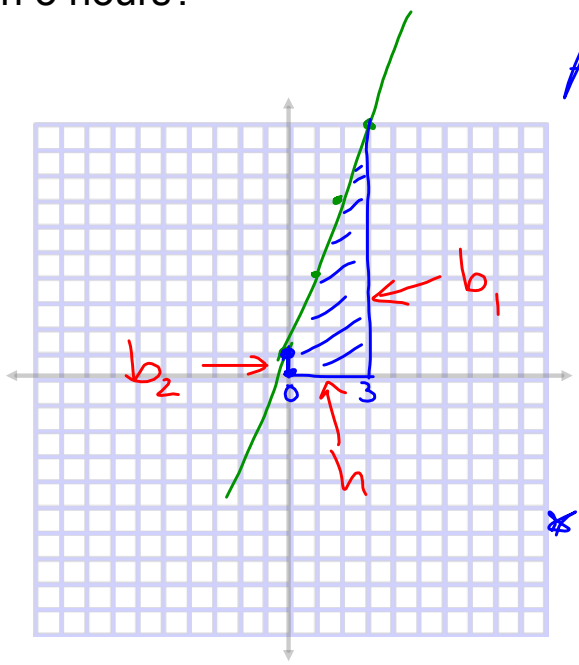


$50\frac{m}{h} \cdot 2h$

100 miles

area under a velocity curve represents the distance traveled

if a cars velocity is described by v(t)=3x+1, how far has it gone in 3 hours?



$A_{Trap.} = \frac{1}{2} h(b_1 + b_2)$

$= \frac{h(b_1 + b_2)}{2}$

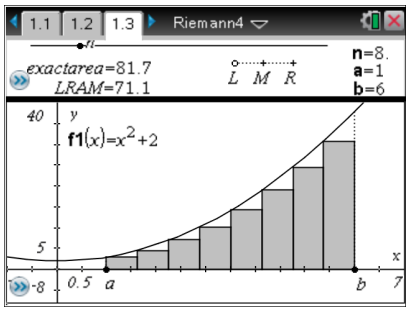
$= \frac{h}{2}(b_1 + b_2)$

* bases are the 11 sides

$A = \frac{3(1+10)}{2} = \frac{33}{2} = 16.5$

a cars velocity is described by $v(t) = x^2 + 2$

Find the area under the curve:



these are left hand rectangles! An equation for the sum:

$$A = b \cdot h \qquad dx$$

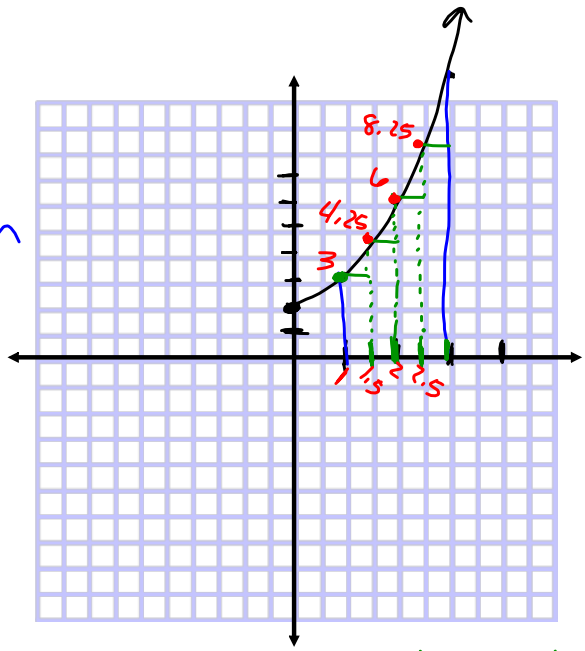
$$\sum_{i=0}^{n} \left(\frac{b-a}{n}\right) f(a + i(dx))$$

a on down rect x's

$y = x^2 + 2$

area between 1 & 3

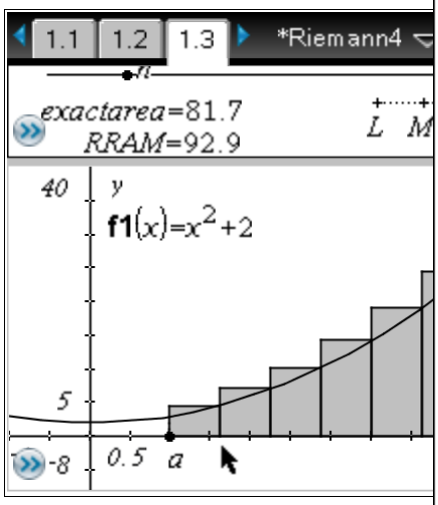
divide into 4 rect.



$$A \approx (.5)(3) + (.5)(4.25) + (.5)(6) + (.5)(8.25)$$

$$A \approx 10.75$$

Find an equation for th



rram

Define LibPub **rram**(a,b,n)=

Func

Return $\sum_{i=1}^{n} (f(a+i\cdot dx))\cdot dx|dx=\frac{b-}{n}$

EndFunc

LRAM – left Rect. Approx. Method

RRAM

MRAM