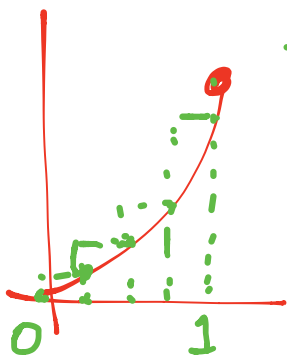
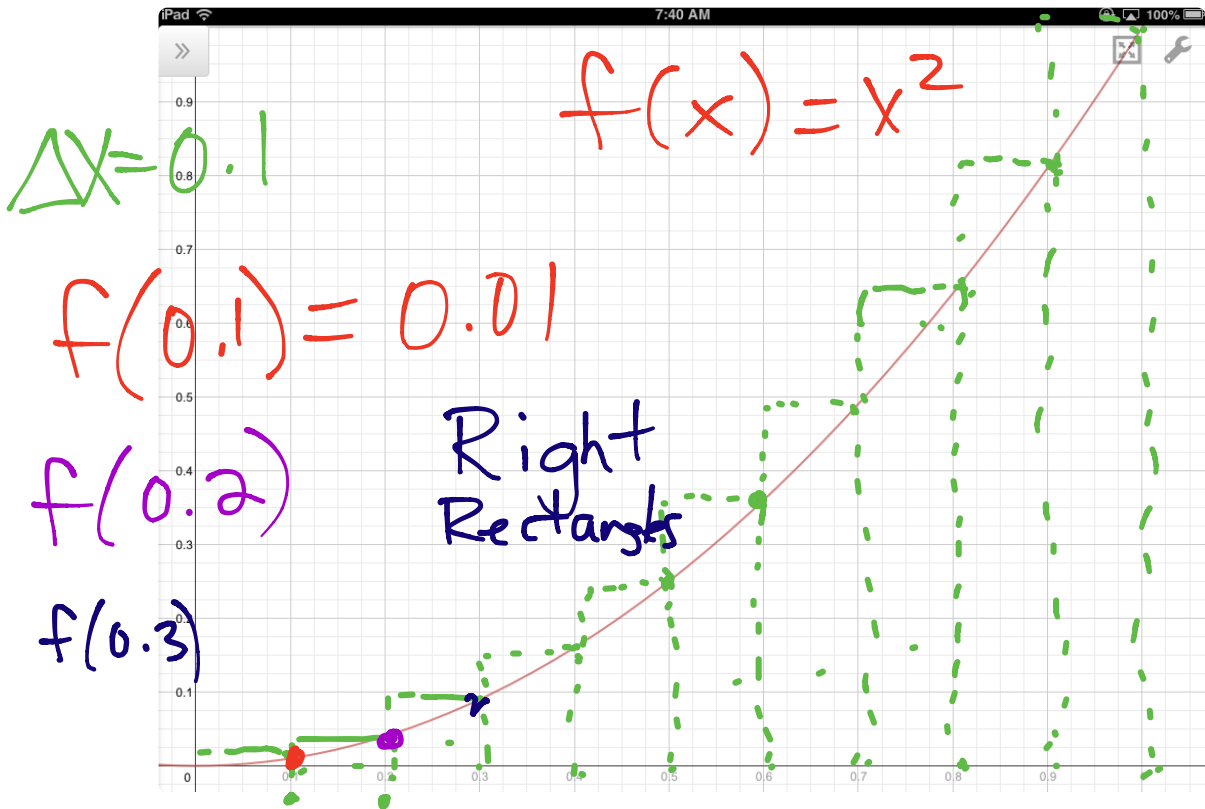


$$f(x) = x^2, \quad x=0 \text{ to } x=1$$

Ten rectangles of equal width.



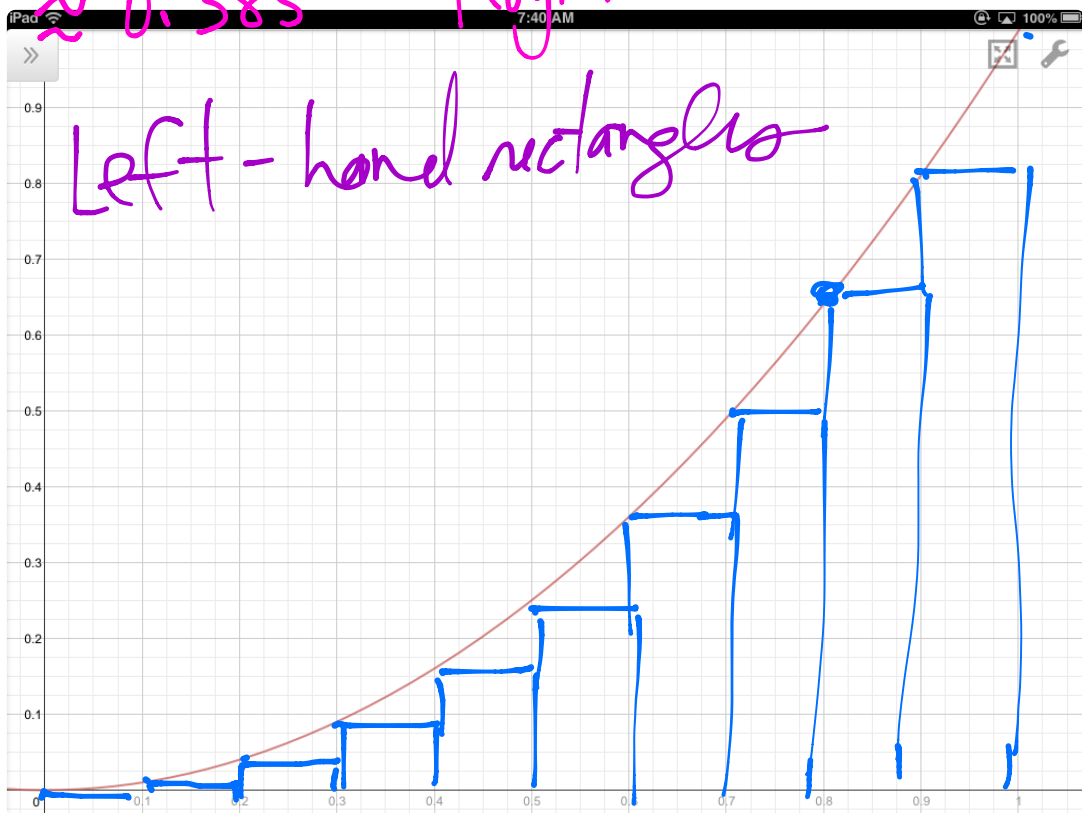
$$A = 0.1 \cdot f(0.1) + 0.1 \cdot f(0.2) + 0.1 \cdot f(0.3) + \dots + 0.1 \cdot f(1)$$



$$\text{Area} = 0.1(f(0.1)) + 0.1 \cdot f(0.2) + 0.1 \cdot f(0.3) + \dots + 0.1 \cdot f(1)$$

$$= 0.1 [f(0.1) + f(0.2) + \dots + f(1)]$$

≈ 0.385 Right-hand rectangles

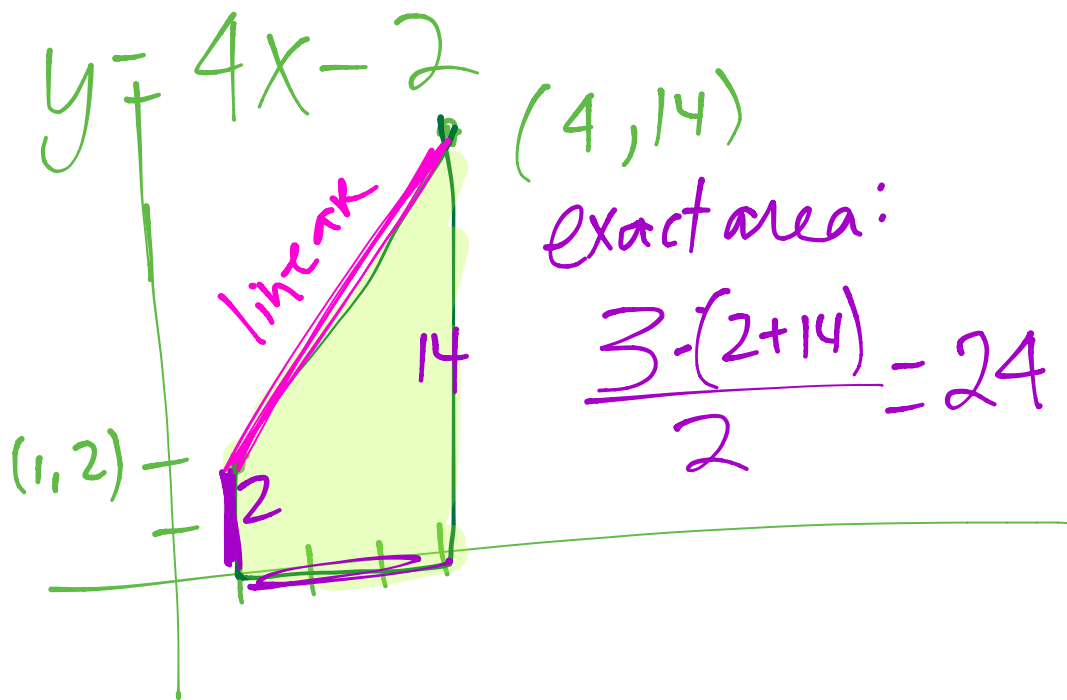


$$\text{Area} = 0.1(f(0) + f(0.1) + f(0.2) + \dots + f(0.9)) = 0.285$$

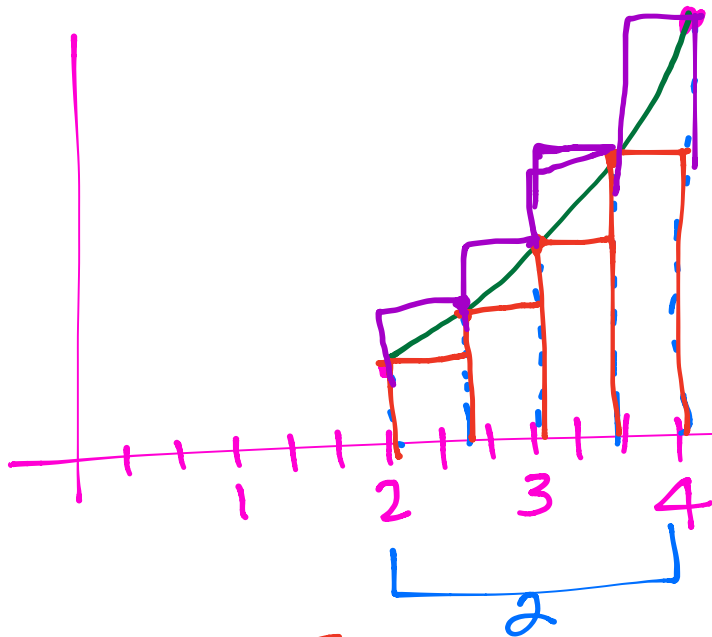
On calculator \rightarrow Lists

VARS: YVARS

$\text{Sum}(L_2) \rightarrow$ this adds the y-values
for us.



$$f(x) = x^2 + x, \quad x=2 \text{ to } 4$$



$$f(2) = 6$$
$$f(4) = 20$$

Left, 4 rect.

$$\Delta x = \frac{2}{4} = \frac{1}{2}$$

width of rectangles

$$\text{Area}_{\text{left}} = 0.5 [f(2) + f(2.5) + f(3) + f(3.5)]$$
$$= 21.25$$

$$\text{Area}_{\text{right}} = 0.5 [f(2.5) + f(3) + f(3.5) + f(4)]$$
$$= 28.25$$

Est. area under curve of
 $f(x) = 4 - x^2$
from $x=0$ to $x=2$.

- ① Left Rect. (4)
 - ② Right Rect. (4)
- } Sketch