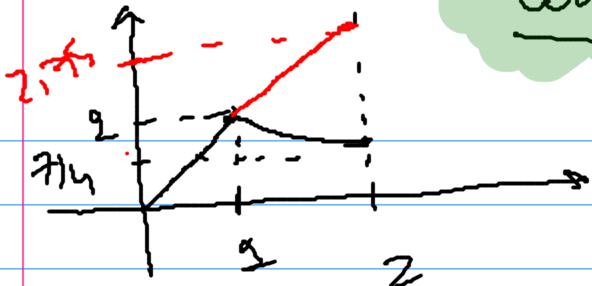
Consulta



en $x \in [1,2]$

$f(x) = -\frac{1}{4}x + 9/4$

$f(x=1) = -1/4 \cdot 1 + 9/4 = 8/4 = 2$

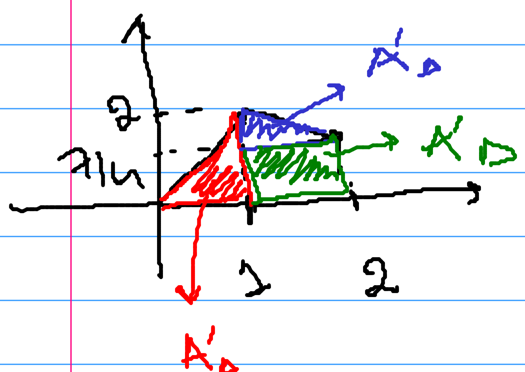
$f(x=2) = -\frac{1}{4} \cdot 2 + 9/4 = 7/4 < 2$

suposición
si cambio $f(x)$

Si $f(x)$ en $[1,2]$ en vez $f(x) = -1/4\,x + \frac{9}{4}$

$f(x) = \frac{1}{4}x + 9/4$ $\qquad$ $f(x=2) = \frac{2}{4} + 9/4 = \frac{11}{4}$

$\frac{8}{4} + \frac{3}{4} = 2,75$ $\quad$ ($0,75$)



$$\int_0^2 f(x)\,dx$$

$$\int_0^2 f(x)\,dx = \int_0^1 f(x)\,dx + \int_1^2 f(x)\,dx$$

$A'_\triangle = \frac{b \cdot h}{2} = \frac{1 \cdot 2}{2} = 1$

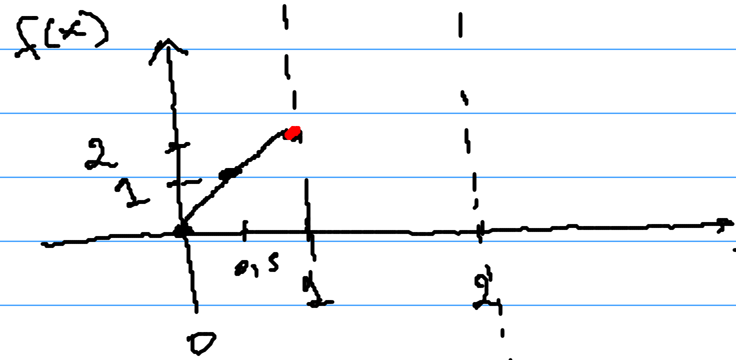
$A'_\triangle = \frac{b \cdot h}{2} = \frac{1 \cdot (2 - 7/4)}{2} = \frac{1}{2} \cdot 1/4 = 1/8$

$A'_\square = l \cdot a = 1 \cdot 7/4 = 7/4$

Área 1 $= A'_\triangle = 1$ $\qquad$ Área 2 $= A'_\triangle + A'_\square$
$= 1/8 + 7/4 = 15/8$

$f(x) : [0,2] \rightarrow \mathbb{R}$

$$f(x) = \begin{cases} 2x & x \in [0,1] \\ -x/4 + 9/4 & x \in [1,2] \end{cases}$$



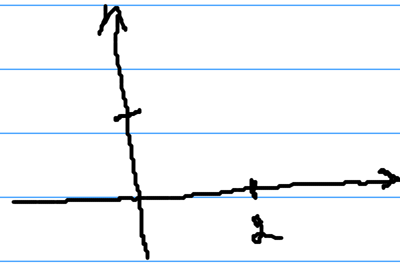
$f(x) = 2x$

$f(x=0) = 0$

$f(x=1) = 2$

$f(x=0,5) = 2(0,5) = 1$

$f(x) = \underbrace{m}_{\text{pendiente curva}} x + \underbrace{n}_{\text{corte ordenada eje de las } y}$



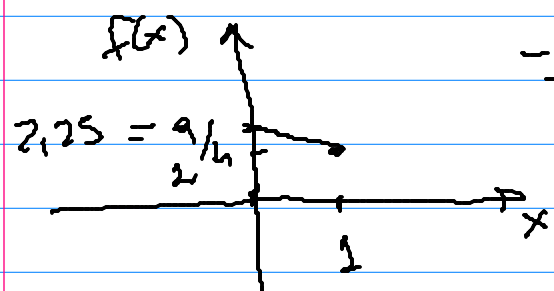
$x=1 \rightarrow \boxed{2x} \rightarrow y = 2$

$x = 0 \rightarrow 0$

$f(x) =$

$[1,2]$ $f(x) = -x/4 + 9/4 = \underbrace{-\frac{1}{4}}_{m<0} \cdot x + \underbrace{9/4}_{n}$

$$\frac{-x}{4} = -\frac{1}{4} \cdot \frac{x}{1}$$

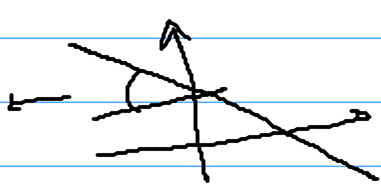


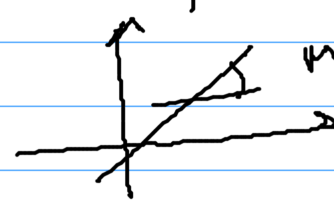
$x = 0$

$f(x=0) = 9/4 = \frac{8}{4} + 1/4$ ($\frac{8}{4} = 2$)

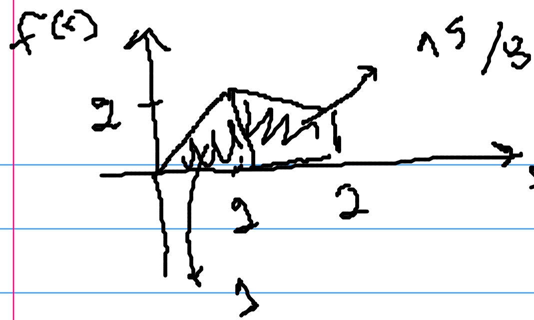
$f(x=1) = -1/4 \cdot 1 + 9/4 = 2$

pendiente negativa $m < 0$





$m > 0$ pendiente positiva



como $f(x)$ en $[0,1]$
$f(x) \geq 0 \Rightarrow \int_0^1 f(x)\,dx = 1$

$$\int_0^2 f(x)\,dx = \int_0^1 f(x)\,dx + \int_1^2 f(x)\,dx$$

como $f(x)$ en $[1,2]$
$f(x) \geq 0 \Rightarrow$
$\int_1^2 f(x)\,dx = 15/8$

$$\Rightarrow \int_0^2 f(x)\,dx = 1 + 15/8$$

$$F(x) = \int_0^2 f(x)\,dx = F(2) - F(0)$$

regla Barrow

$$F'(x) = f(x)$$

$$f(x) = x \quad , \quad F(x) = \int f(x)\,dx = \int x\,dx = \frac{x^2}{2} + K$$

$$F(x) = \frac{x^2}{2} + K \qquad F'(x) = \frac{2x \cdot 1}{2} = x = f(x)$$