

MÁXIMOS
y MÍNIMOS

CALCULAR EL VALOR MÁXIMO

DE: $y = -3x^2 + 12x + 1$
 $-6x + 12 = 0$

$x = 2$
 $y = -12 + 24 + 1$
 $y_{\text{máx}} = 13$

CALCULAR EL VALOR MÍNIMO

DE:

$y = 5x^2 - 20x + 1$

$10x - 20 = 0$

$x = 2$

$y = 20 - 40 + 1$

$y = -19$
 $y_{\text{mín}}$

CALCULAR EL MÍNIMO VALOR

DE: $y = \sqrt{x^2 - 4x + 13} + 5$

$y = \sqrt{x^2 - 4x + 4 + 9} + 5$

$y = \sqrt{(x-2)^2 + 9} + 5$

$y = 8$

Calcular el Máximo Valor
de:

$$y = \frac{36}{x^2 + 4x + 10}$$

~~$$y = \frac{36}{x^2 + 4x + 4 + 6}$$~~
$$y = 6$$

Calcular el Mínimo Valor
de:

$$y = x + \frac{16}{x}$$

$$y_{\min} = 2\sqrt{16} = 8$$

$$y = x + \frac{25}{x}$$

$$y_{\min} = 2\sqrt{25} = 10$$

$$y = x + \frac{81}{x+1}$$

$$y = 2\sqrt{81} - 1 = 17$$

$$y = x + \frac{36}{x-3}$$

$$y = \sqrt{36} + 3 = 9$$

$$y = 2x + \frac{27}{x^2}$$

$$y = 3\sqrt[3]{27} = 9$$

$$y = 3x + \frac{16}{x^3}$$

$$4\sqrt[4]{16} = 8$$

$$y = \frac{x^2 + 2x + 82}{x+1}, x > -1$$

$$y = \frac{x^2 + 2x + 1 + 81}{x+1}$$

$$y = \frac{(x+1) + 81}{(x+1)}$$

$$2\sqrt{81} = 18$$

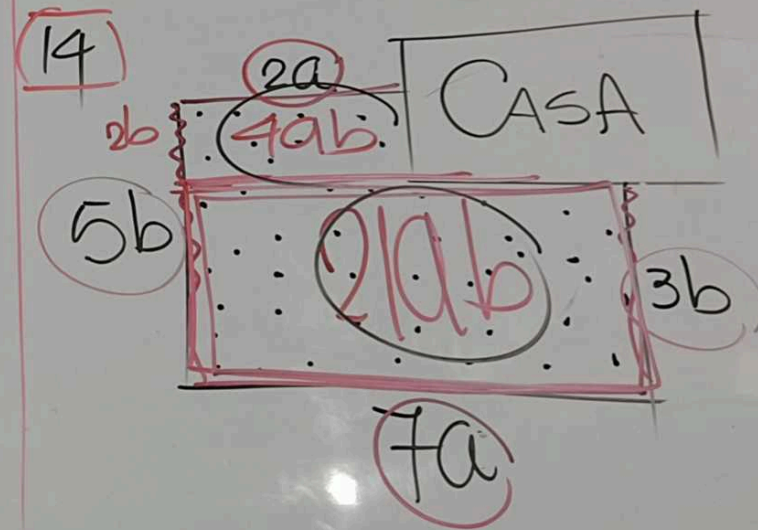
$$y = \frac{64x^2}{3x^3 + \frac{16}{x}}$$

$$y = \frac{64}{3x + \frac{16}{x^3}}$$

$$y = \frac{64}{8} = 8$$

Si $a + b = 1 \rightarrow (ab)_{\max} = \frac{1}{4}$

$\frac{1}{2} \quad \frac{1}{2}$



$\frac{1}{4}$

$$CERCA = 48_m$$

$$9a + 8b = 48$$

$$\underline{24} \quad \underline{24}$$

$$9a = 24 \quad 8b = 24$$

$$a = \frac{8}{3} = 3$$

$$A = 25ab$$

$$25\left(\frac{8}{3}\right)(3)$$

700

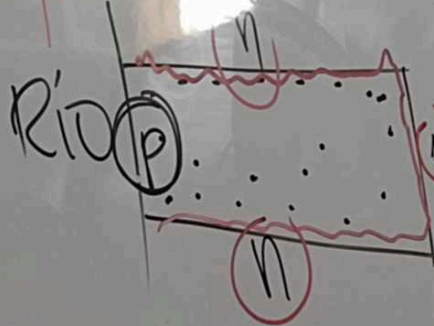
$$Si: a \times b = 16 \rightarrow (a+b) = 8$$

$$4 \times 4 \quad \text{mín}$$

El costo de cerca es de $\frac{9}{4}$
pero la parte que está
junto al río cuesta $\frac{9}{5}$.

Si el área del terreno
es 200_m^2 . **HALAR EL COSTO**

MINIMO.



Costo:

$$4(2n+p) + 5p$$

$$(8n + 9p)$$

$$120 + 120 \text{ mín}$$

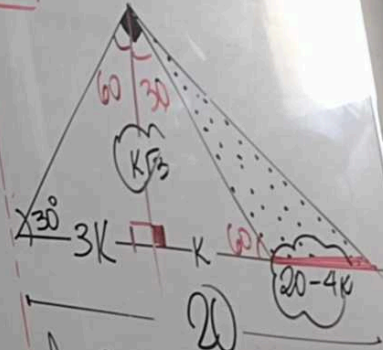
$$240$$

$$8.9 \cdot p = 200 \cdot 8.9$$

$$(8n)(9p) = 14400$$

$$\frac{170}{170}$$

13



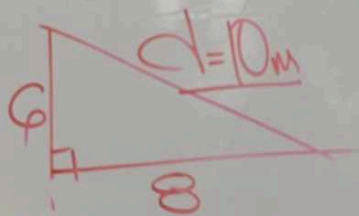
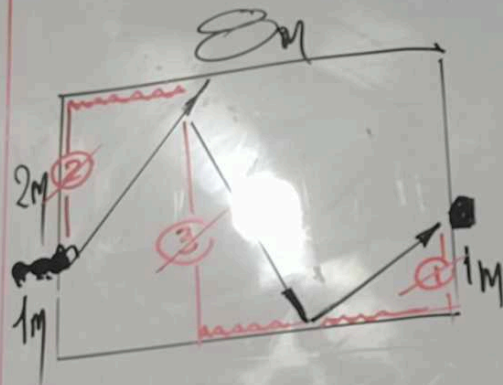
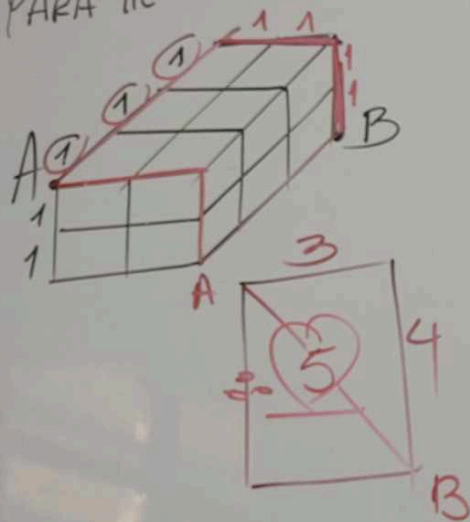
$$A = \frac{(20-4k)k\sqrt{3}}{2} = (10-2k)k\sqrt{3}$$

$$A = 2\sqrt{3}(5-k)k$$

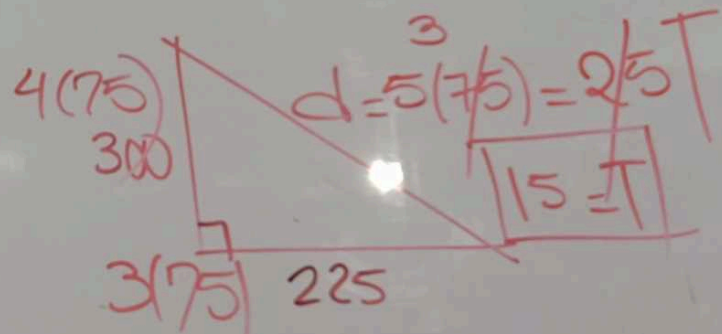
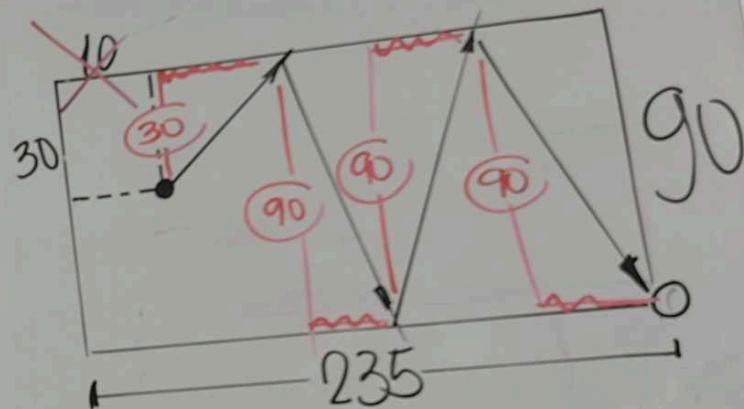
$$2\sqrt{3} \cdot \frac{5}{2} \cdot \frac{5}{2}$$

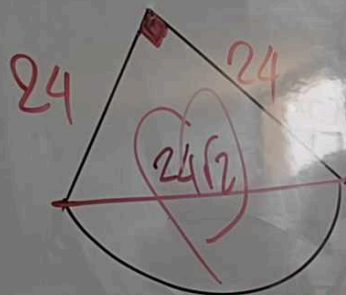
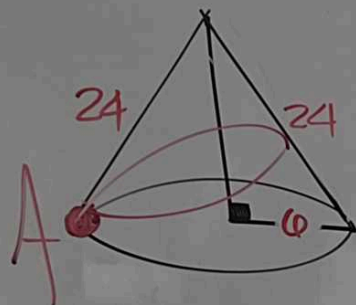
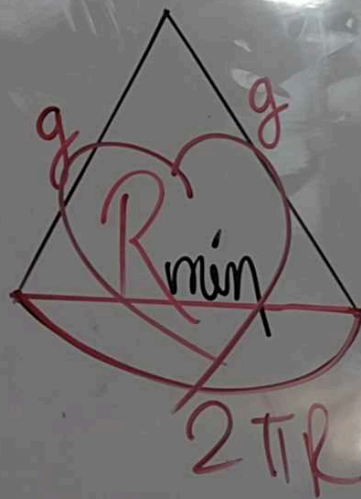
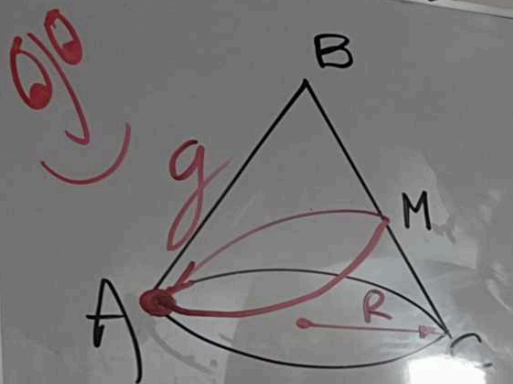
$$12.5\sqrt{3}$$

HALLAR EL RECORRIDO MÍNIMO
PARA IR DE A HACIA B



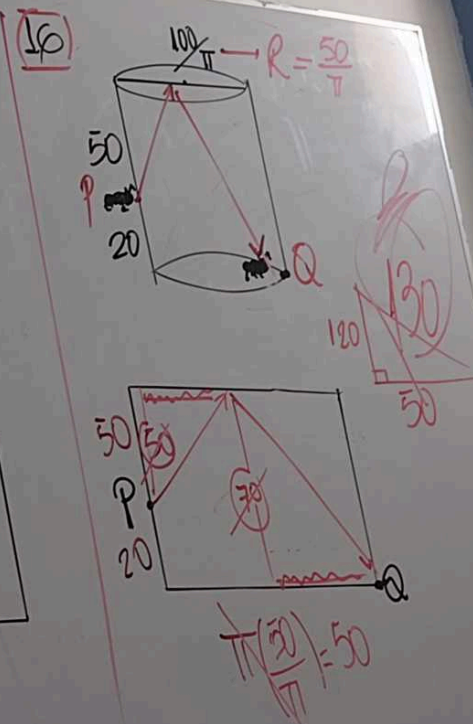
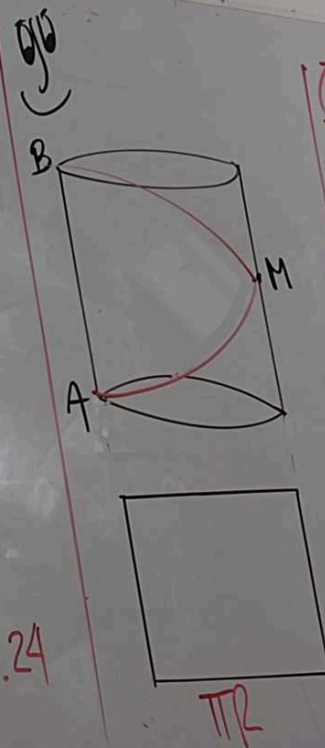
15





$$12\pi = 0.24$$

$$\frac{\pi}{2} = \theta$$



$$\frac{5}{2} + \frac{5}{2} = 5$$

$$C = \frac{T}{T_{cyc}} + 1$$

(25) $\eta = \frac{12}{n} + 1$

$\boxed{n=4}$

$12(X-1)=60$
 $\boxed{X=6}$

C	T	T
4	3	12
X	X-1	20

$n \left(\frac{T}{T_{cyc}} + 1 \right)$
 #Pastillas C/TOMA

(06) $\frac{5}{2} \left(\frac{T}{3} + 1 \right) + \frac{3}{2} \left(\frac{T}{2} + 1 \right) = 688$

\boxed{T}

(09) $2 \left(\frac{T}{6} + 1 \right) + 1 \left(\frac{T}{8} + 1 \right) = 50$

$\boxed{T=}$