$x > 0$

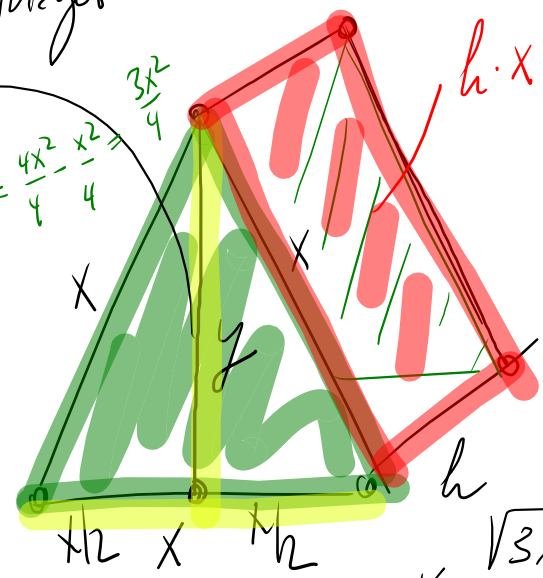
$y^2 + \left(\frac{x}{2}\right)^2 = x^2$ Pythagoras

$y = \sqrt{\frac{4x^2}{4} - \frac{1x^2}{4}}$

$\frac{x^2}{1} - \frac{x^2}{4} = \frac{4x^2}{4} - \frac{x^2}{4} = \frac{3x^2}{4}$

$= \sqrt{\frac{3x^2}{4}}$

$= \frac{\sqrt{3x^2}}{\sqrt{4}} = \frac{\sqrt{3x^2}}{2} = \frac{\sqrt{3}\cdot x}{2}$



$V = 483$

$= \text{Bse} \quad h = \frac{x^2\sqrt{3}}{4} \cdot h = 483$

$\Rightarrow h = \frac{4 \cdot 483}{x^2\sqrt{3}} = \frac{1932}{x^2\sqrt{3}}$

$\frac{x \cdot \frac{\sqrt{3x^2}}{2}}{\frac{2}{1}} = \frac{x}{2} \cdot \frac{\sqrt{3x^2}}{2} = \frac{x\sqrt{3x^2}}{4} = \frac{x \cdot \sqrt{3} \cdot \sqrt{x^2}}{4}$

$= \frac{x^2\sqrt{3}}{4}$

$x \cdot \frac{\sqrt{3x^2}}{2} \cdot \frac{1}{2}$

$A(x) = 1 \cdot \frac{x^2\sqrt{3}}{4} + 3 \cdot$

2 · 

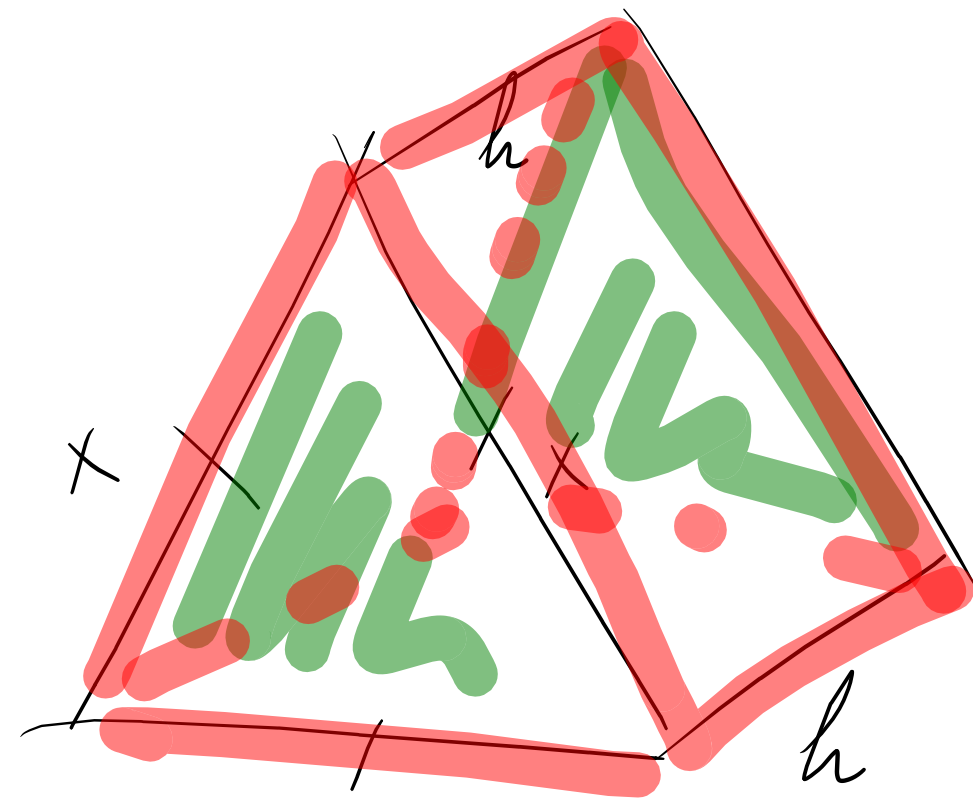
$h \cdot x = \frac{1932}{x^2\sqrt{3}} \cdot \frac{x}{1} = \frac{1932}{x\sqrt{3}}$

$\frac{1932x}{x^2\sqrt{3}} = \frac{x \cdot 1932}{x \cdot x \cdot \sqrt{3}}$

$A(x) = \frac{x^2\sqrt{3}}{2} + \frac{3 \cdot 1932}{x\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{x^2\sqrt{3}}{2} + \frac{4 \cdot 483\sqrt{3}}{x} = \frac{x^2\sqrt{3}}{2} + \frac{1932\sqrt{3}}{x}$

$$A(x) = \frac{\sqrt{3}\,x^2}{2} + \frac{1032\sqrt{3}}{x}$$

$\frac{\sqrt{3}\,x^2}{4}$ p 42 form.



$V = 483$

b) $A'(x) = \left(\frac{\sqrt{3} \cdot x^2}{2} + \frac{1932\sqrt{3}}{x} \right)'$

$= \left(\frac{\sqrt{3} \cdot x^2}{2} \right)' + \left(\frac{1932\sqrt{3}}{x} \right)'$

$= \frac{\sqrt{3}}{2} (x^2)' + 1932\sqrt{3} \left(\frac{1}{x} \right)'$ formulaire

$= \frac{\sqrt{3}}{2} \cdot 2 \cdot x + 1932\sqrt{3} \cdot \frac{-1}{x^2}$ ✓

$= \frac{\sqrt{3}}{1} \cdot x - \frac{1932\sqrt{3}}{x^2}$

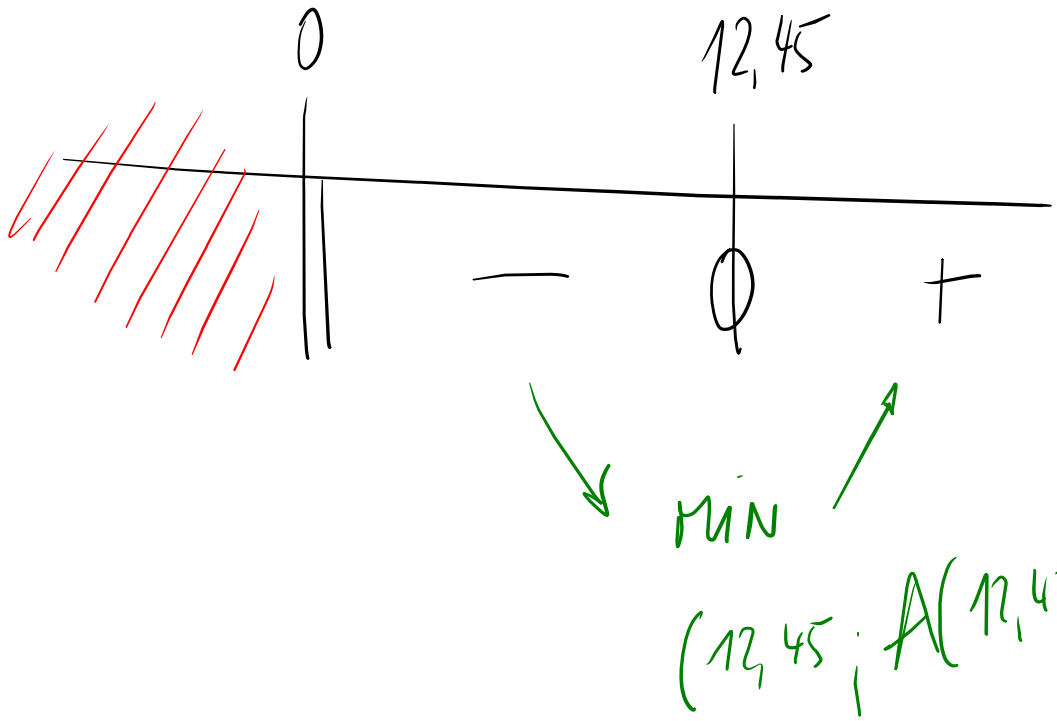
$= \frac{\sqrt{3}\, x^3 - 1932\sqrt{3}}{x^2} = \frac{\sqrt{3}\,(x^3 - 1932)}{x^2}$ ✓

c) $A'(x) = 0$ $\quad D_{A'} = \mathbb{R} - \{0\}$ $\quad x > 0$

$$\underbrace{\sqrt{3}}_{\neq 0} \cdot \underbrace{\left(x^3 - 1932 \right)}_{=0} = 0$$

$$x^3 = 1932$$

$$x = \sqrt[3]{1932} \simeq 12,45477$$



$$x \simeq 12,5 \text{ cm}$$

$$h \simeq \frac{1932}{(12,45477)^2 \cdot \sqrt{3}} \simeq 7,19 \neq 7,2 \text{ cm}$$