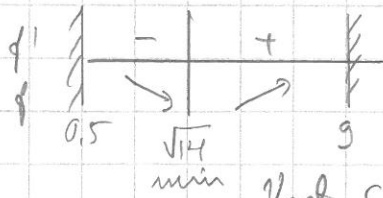


$f$  jätt. jö deriiv. väl  $[0,5; 9]$

$$f'(x) = 1 + \frac{0 \cdot x - 14 \cdot 1}{x^2} = 1 - \frac{14}{x^2} = 0 \quad | \cdot x^2 \Rightarrow x^2 - 14 = 0 \Rightarrow x^2 = 14 \quad | \sqrt{\quad}$$

$$\Rightarrow x = \pm \sqrt{14} \approx 3,741$$



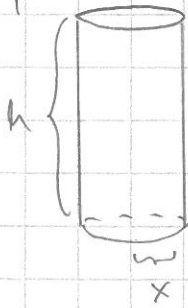
$$f'(1) = -13 < 0$$

$$f'(5) = \frac{11}{25} > 0$$

$$y = \frac{7}{\sqrt{14}} \approx 1,871$$

Vast. Seinän muuntainen sein:  $x = 3,74 \text{ m}$  jö seinän vasten  $\perp$   
sein:  $y = 1,87 \text{ m}$

13,4



$$V = \pi x^2 \cdot h = 4,0 \text{ (dm}^3) \quad | : \pi x^2 \Rightarrow h = \frac{4}{\pi x^2}$$

rajoitukset:  $x = 0$

$h = 0 : x = \infty$

Peltin kulum:

$$A(x) = \underbrace{2 \cdot \pi x^2}_{\text{pohjat}} + \underbrace{2\pi x \cdot h}_{\text{seinä}} = 2\pi x^2 + 2\pi x \cdot \frac{4}{\pi x^2}$$

$$= 2\pi x^2 + \frac{8}{x}$$

$A$  jätt. jö deriiv. kun  $x > 0$

$$A'(x) = 4\pi x + \frac{0 \cdot x - 8 \cdot 1}{x^2} = 4\pi x - \frac{8}{x^2} = 0$$