

Eindexamen wiskunde B1-2 vwo 2006-I

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Een halve cirkel

$$15. \quad f'(x) = 1 \rightarrow \frac{-x+2}{\sqrt{4x-x^2}} = 1$$

$$(-x+2)^2 = 4x-x^2 \rightarrow x^2-4x+2 = 0$$

$$x = \frac{4 \pm \sqrt{16-8}}{2} \rightarrow x = 2 - \sqrt{2} \quad \text{of} \quad x = 2 + \sqrt{2}$$

Dus $x = 2 - \sqrt{2}$ ofwel $0,6$

Of met de GR:

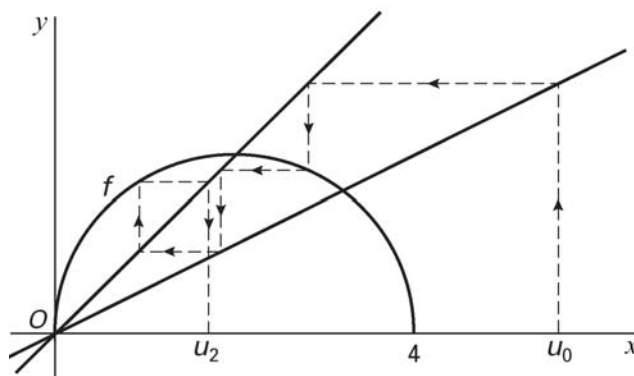
$$y_1 = -x+2 \quad y_2 = \sqrt{4x-x^2}$$

intersect $\rightarrow x = 0,6$

$$16. \quad I = \pi \int_0^2 ((\sqrt{4x-x^2})^2 - x^2) dx = \pi \left[2x^2 - \frac{2}{3}x^3 \right]_0^2 = \frac{8}{3}\pi$$

$$17. \quad u_4 = f\left(\frac{1}{2} \cdot u_3\right) = f\left(\frac{2}{5}\right) = \sqrt{4 \cdot \frac{2}{5} - \left(\frac{2}{5}\right)^2} = \frac{6}{5}$$

18.



$$19. \quad \sqrt{4 \cdot \frac{1}{2}x - \left(\frac{1}{2}x\right)^2} = x$$

$$2x - \frac{1}{4}x^2 = x^2 \rightarrow 2x \left(1 - \frac{5}{8}x\right) = 0$$

$$x = 0 \quad \text{of} \quad x = \frac{8}{5}$$

De positieve limiet is $\frac{8}{5}$.