

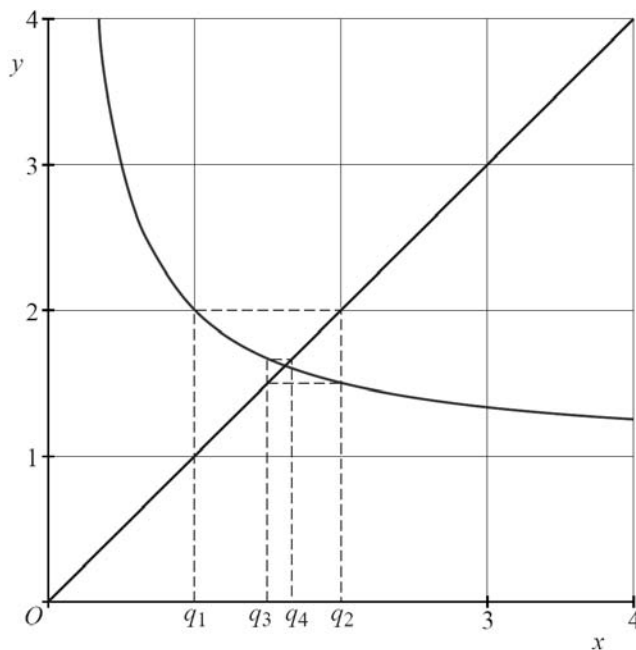
De quotiëntenrij van de rij van Fibonacci

16. Substitueer $u_n = u_{n-1} + u_{n-2}$ in $q_n = \frac{u_n}{u_{n-1}}$

Dan $q_n = \frac{u_{n-1} + u_{n-2}}{u_{n-1}} = 1 + \frac{u_{n-2}}{u_{n-1}} = 1 + \frac{1}{\frac{u_{n-1}}{u_{n-2}}}$ ($q_{n-1} = \frac{u_{n-1}}{u_{n-2}}$)

$$q_n = 1 + \frac{1}{q_{n-1}}$$

17.



18. Voor de limiet geldt: $q = 1 + \frac{1}{q}$ $q - \frac{1}{q} - 1 = 0$ $q^2 - q - 1 = 0$

$$D = (-1)^2 - 4 \cdot 1 \cdot (-1) = 5$$

$$q_1 = \frac{1 - \sqrt{5}}{2} \quad \vee \quad q_2 = \frac{1 + \sqrt{5}}{2}$$

q_1 voldoet niet (zie grafieken) dus limiet is $\frac{1 + \sqrt{5}}{2}$