

Bewegende schaduw

$$\begin{aligned} 6. \quad L(t) = x_A - x_B &= \cos(t - \pi/6) - \cos(t + \pi/6) = \\ &= -2 \cdot \sin(t) \cdot \sin(\pi/6) = \\ &= -2 \cdot \sin(t) \cdot (-1/2) = \sin t \end{aligned}$$

$$7. \quad g = \frac{1}{\pi} \int_0^{\pi} \sin t \, dt = \frac{1}{\pi} \cdot [-\cos t]_0^{\pi} = \frac{1}{\pi} \cdot (1+1) = \frac{2}{\pi}$$

$$\begin{aligned} 8. \quad L(t) &= \sin t = 2/\pi \\ y_1 &= \sin t \\ y_2 &= 2/\pi \\ \text{intersect levert:} \quad &t = 0,69 \text{ of } t = 2,45 \\ L(t) > 2/\pi : \quad &2,45 - 0,69 = 1,76 \text{ sec} \\ L(t) < 2/\pi : \quad &\pi - 1,76 = 1,38 \text{ sec} \\ \text{Beide delen zijn dus niet even groot.} \end{aligned}$$