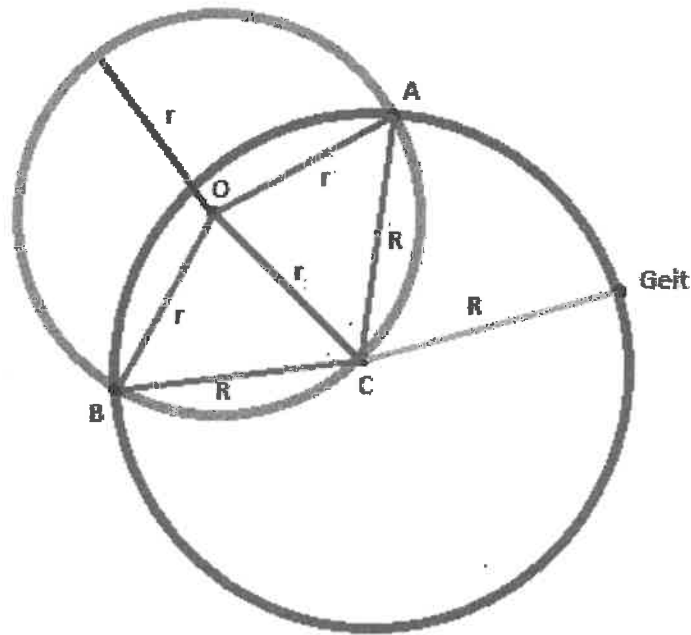


r = straal grasveld
 R = straal touw / lengte touw
 C = paal geit
 O = midden grasveld

hoek $OCA = x$, Dus hoek $ACB = 2x$
 dus hoek $OCB = x$

$$\begin{aligned}
 \frac{1}{2}R^2 \cdot 2x &= R^2 \cdot x \quad \rightarrow \quad ACB? \\
 AO + BO &= 2\left(\frac{1}{2}r^2(\pi - 2x) - \frac{1}{2}r^2 \sin(\pi - 2x)\right) \\
 &= r^2(\pi - 2x - \sin(2x))
 \end{aligned}$$



$$\begin{aligned}
 R &= 2r \cos(x) \\
 \text{Dus } R^2 \cdot x &= 4r^2 \cdot x \cdot \cos^2(x)
 \end{aligned}$$

Oplossen met de methode van Newton-Raphson

$$\begin{aligned}
 4r^2 \cdot x \cdot \cos^2(x) + r^2(\pi - 2x - \sin(2x)) &= \frac{1}{2}\pi \cdot r^2 && \text{ofwel...} \\
 4x \cdot \cos^2(x) + (\pi - 2x - \sin(2x)) &= \frac{1}{2}\pi \\
 4x \cdot \cos^2(x) + \frac{1}{2}\pi - 2x - \sin(2x) &= 0
 \end{aligned}$$

Verhouding tussen \rightarrow lengte touw : straal grasveld

Dus $R/r = 2\cos(x)$

Uiteindelijk $\rightarrow x = 0,95284786466 \rightarrow \cos(x) = 0,579364236509$

Dussssss $\rightarrow R/r = 2\cos(x) = 2 \cdot 0,579364236509 = 1,15872847$

