Nederlandse Wiskunde Olympiade voor Bedrijven

Friday, 30 January 2026

- Available time: 20 minutes.
- For this "uitsmijter" only an answer is required, no calculation or proof.
- In total 10 points can be achieved.
- All answers should be given in exact and simplified form, like $\frac{11}{81}$, $2+\frac{1}{2}\sqrt{5}$, $\frac{1}{4}\pi+1$, or 3^{100}.
- Calculators, formula sheets and electronic devices are not allowed. You can only use pen and paper and of course your mental skills.
- Good luck!

For the contest managers:	Score first round:	Score uitsmijter:

Name:

Company/team:

Uitsmijter

We consider two points A and B with a mutual distance of $|AB| = 1$. For each real number $\lambda > 1$, there exists a point C on the line segment AB such that $\frac{|AC|}{|BC|} = \lambda$. Moreover, a point D on the extension of the line segment AB exists such that $\frac{|AD|}{|BD|} = \lambda$ as well.

a) Suppose that $\lambda = \frac{7}{3}$. Calculate the distance $|CD|$.

b) Suppose that $|CD| = \frac{60}{11}$. Calculate λ.

c) Let P be the point of tangency of one of the two tangents through A to the circle with diameter CD. Suppose that $|AP| = \frac{13}{12}$. Calculate λ.