

# The Ant on the Rubber Band

History and provenance

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## The ant on a rubber rope

This is the *ant on a rubber rope* paradox, also told using a worm or rubber band. Ting-Yang Hsiao's mathematical treatment surveys the classical setting and studies extensions [1]. Its references include Martin Gardner's *aha! Gotcha* (1982), a documented popular account in this tradition.

## A family of different stretching rules

The constant-speed stretching problem asks whether a steadily walking ant can finish even though the far end always moves away much faster. Its solution depends on fractional progress and a divergent accumulated sum or integral.

Replacing constant-speed growth with exponential growth changes the answer. Instantaneous doubling once per second and smooth exponential doubling are also distinct rules, even though the ant fails in both cases at the numerical speeds on this page.

The statement now identifies the ant's speed as relative to the rubber and makes the stepwise doubling rule explicit. I did not establish the first inventor of the puzzle; the cited research and Gardner reference document its mathematical and recreational circulation.

## Sources

- [1] Ting-Yang Hsiao, The Ant on a Rubber Rope Paradox (2020; arXiv:2101.03890).  
<https://arxiv.org/abs/2101.03890>

Sources checked September 7, 2026. A documented appearance is not necessarily the earliest appearance.