The Math of Achilles

Geoffrey A. Landis
NASA Glenn Research Center

Follow this and additional works at: https://scholarship.claremont.edu/jhm
Part of the Poetry Commons

Recommended Citation

©2014 by the authors. This work is licensed under a Creative Commons License.
JHM is an open access bi-annual journal sponsored by the Claremont Center for the Mathematical Sciences and published by the Claremont Colleges Library | ISSN 2159-8118 | http://scholarship.claremont.edu/jhm/

The editorial staff of JHM works hard to make sure the scholarship disseminated in JHM is accurate and upholds professional ethical guidelines. However the views and opinions expressed in each published manuscript belong exclusively to the individual contributor(s). The publisher and the editors do not endorse or accept responsibility for them. See https://scholarship.claremont.edu/jhm/policies.html for more information.
Sing, O Muse, of the math of Achilles
son of Peleus, the swiftest of Greeks.
Tell of the tale of his race with the tortoise:
most excellent in armor but not swift on his feet.
Sing of how the philosopher speaks.

Here’s how the philosopher Zeno propounded
the paradox by which he Achilles confounded:
Fleet-footed Achilles could not beat a tortoise
For the challenge of a queer mathematical sort is.

Give him, O Greek, a head start of two paces
Thus, when he’s started, you must first overtake his
starting position before you can pass.
But that your can never accomplish, alas.

At first he must go half the distance remaining
And when he’s done that, half the distance that’s left
And then once again half the distance attaining
And though with each step he may gain yet a half,
An infinite number of halves are yet to go
He’ll never be finished, be the tortoise ever so slow.

So even Achilles must find himself overthrown,
To conquer infinity, as Zeno’s clearly shown
Though the notion’s implausible,
  motion’s impossible
    the tortoise unpassable,
      therefore unbeatable,
        and even invincible
Achilles must lose. It’s the math of the Greeks.

So here is the lesson: you’ll need infinitesimal
tools calculational to outthink the Greeks.
But Achilles, that rascal, just raced on past anyway
(Beat a turtle for him is just child’s play)
so sometimes you shouldn’t listen to what experts say.
–And always beware of the logic of Greeks.