

# Episode One Hundred Twenty - Letter to Herodotus 09 - Epicurus' Rejection of Infinite Divisibility

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Wikipedia: Infinite Divisibility: [https://en.wikipedia.org/wiki/Infinite\\_divisibility](https://en.wikipedia.org/wiki/Infinite_divisibility)

Wikipedia: Zeno's Paradoxes: [https://en.wikipedia.org/wiki/Zeno%27s\\_paradoxes](https://en.wikipedia.org/wiki/Zeno%27s_paradoxes)

**Zeno's paradoxes** are a set of [philosophical](#) problems generally thought to have been devised by [Greek](#) philosopher [Zeno of Elea](#) (c. 490–430 BC) to support [Parmenides'](#) doctrine that contrary to the evidence of one's senses, the belief in [plurality](#) and change is mistaken, and in particular that [motion](#) is nothing but an [illusion](#). It is usually assumed, based on [Plato's \*Parmenides\*](#) (128a–d), that Zeno took on the project of creating these [paradoxes](#) because other philosophers had created paradoxes against Parmenides' view. Thus Plato has Zeno say the purpose of the paradoxes "is to show that their hypothesis that existences are many, if properly followed up, leads to still more absurd results than the hypothesis that they are one."[\[1\]](#) Plato has [Socrates](#) claim that Zeno and Parmenides were essentially arguing exactly the same point. [\[2\]](#) Some of Zeno's nine surviving paradoxes (preserved in [Aristotle's \*Physics\*](#)[\[3\]](#)[\[4\]](#) and [Simplicius's](#) commentary thereon) are essentially equivalent to one another. Aristotle offered a refutation of some of them.[\[3\]](#) Three of the strongest and most famous—that of Achilles and the tortoise, the [Dichotomy](#) argument, and that of an arrow in flight—are presented in detail below.

Zeno's arguments are perhaps the first examples of a method of proof called [reductio ad absurdum](#), also known as [proof by contradiction](#). They are also credited as a source of the [dialectic](#) method used by Socrates.[\[5\]](#) Some mathematicians and historians, such as [Carl Boyer](#), hold that Zeno's paradoxes are simply mathematical problems, for which modern [calculus](#) provides a mathematical solution.[\[6\]](#) Some [philosophers](#), however, say that Zeno's paradoxes and their variations (see [Thomson's lamp](#)) remain relevant [metaphysical](#) problems.[\[7\]](#)[\[8\]](#)[\[9\]](#) The origins of the paradoxes are somewhat unclear. [Diogenes Laërtius](#), a fourth source for information about Zeno and his teachings, citing [Favorinus](#), says that Zeno's teacher Parmenides was the first to introduce the paradox of Achilles and the tortoise. But in a later passage, Laërtius attributes the origin of the paradox to Zeno, explaining that Favorinus disagrees.[\[10\]](#)