

# Presocratics

ZENO

# Zeno of Elea

- ZEE-NO
- Eleatic philosopher
- c.490-after 445 BCE
- Loved to attack Heraclitus' position that the world is constantly changing
- Paradoxes about motion

# Zeno Race Course

- Zeno argues that it is impossible for a runner to traverse a race course. His reason is that:

“motion is impossible, because an object in motion must reach the half-way point before it gets to the end” (Aristotle, *Physics* 239b11-13).

# Zeno

- Why is this a problem?

# Zeno

- The same argument can be made about **half** of the race course: it can be divided in half just as entire race course can be divided in half. What you wind up with, then, is the half of the half of the half, and on and on.

# Zeno

- Main assumption:
- **Infinite divisibility**: the distance from the beginning (B) to the finish line (F) can be divided into an infinite number of parts.

# Zeno

- Was he saying (a) that before you reach  $F$ , you must reach the point halfway from the halfway point to  $F$ ?
- This is the **progressive** version of the argument: the subdivisions are made on the finish line side of the race-course.

# Zeno

- Or was he saying (b) that before you reach the halfway point, you must reach the point halfway from  $B$  to the halfway point? This is known as the **regressive** version of the argument: the subdivisions are made on the starting point side of the race-course.

# Zeno

- If he meant (a), the progressive version, then he thought that the runner could not **finish** the race. If he meant (b), the regressive version, then it the point was that the runner couldn't even **start** the race.

# Zeno

- Zeno may think:
  - A) that **no** motion could be completed

OR

- B) that **no** motion could be begun.

# Zeno

- Either conclusion seems crazy.
- Scholars aren't sure which version Zeno had in mind!

(I know: so what *else* is new!)