Beginning at opposite ends of a long road, and at the same time, two runners, Bob and Mike, start running towards each other at constant rates. They pass by each other but keep running, maintaining their respective speeds and directions throughout their runs. Some minutes after they pass each other, Bob finishes his run at Mike’s starting point, and even later, Mike arrives at Bob’s starting point. How long was each runner running before they met in terms of the times they ran after they met? (Use multiple representations to solve and discuss the mathematical practices you use as you use them.)

How could this diagram be used to solve the problem? Be sure to label axes and describe how the points relate to the quantities in the problem.

