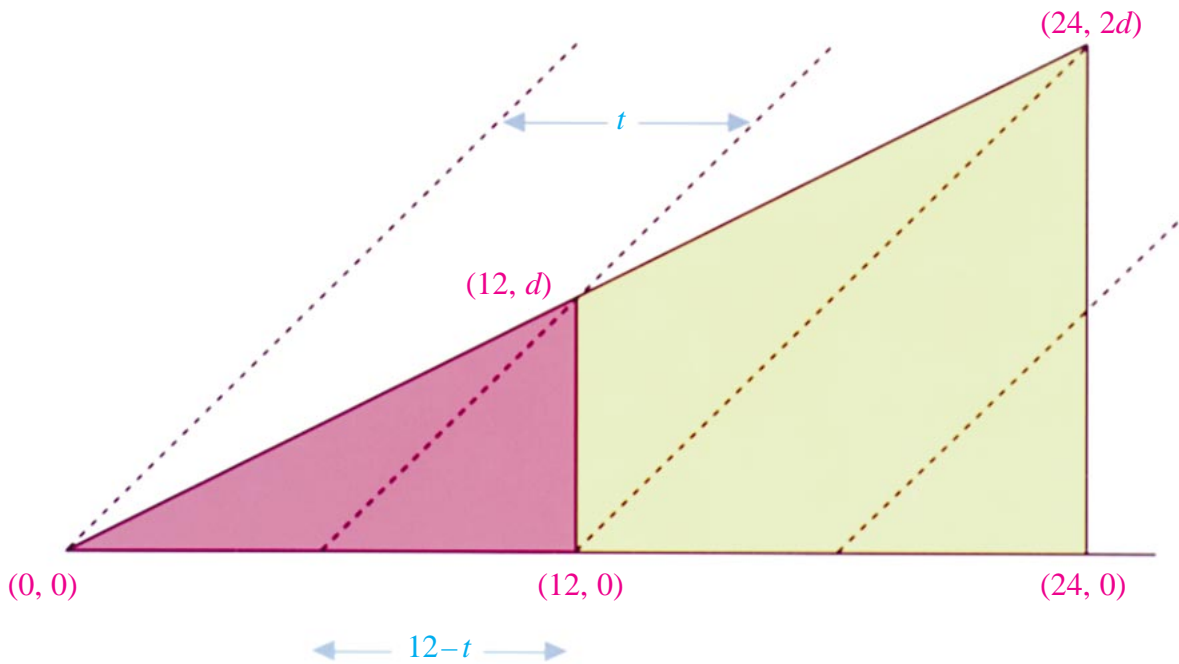


The Problem

A person walking along a bus route notices that a bus passes him (going in the same direction) every 12 minutes. A bus going in the opposite direction passes him every 4 minutes. Assume the walker and the buses all travel at constant speeds. If the buses leave their terminals at equally-spaced intervals of time, how many minutes, t , is each of these intervals?

Strategies and Hints



1. Suppose you used a horizontal axis for time and a vertical axis for distance. The figure shows the situation for the buses going in the same direction as the walker. It takes $12 - t$ minutes for a bus to go the same distance, d , that the walker travels in 12 minutes. Draw a similar figure for the buses going in the opposite direction.
2. Write two ratios showing the relative speeds of the buses to the walker.