# Problem 35

For Problems 34 through 43, draw a complete pictorial representation. **Do *not* solve these problems or do any mathematics.**

A jet plane is cruising at 300 m/s when suddenly the pilot turns the engines up to full throttle. After traveling 4.0 km, the jet is moving with a speed of 400 m/s. What is the jet's acceleration as it speeds up?

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### Solution

The motion can be split into two parts: one where the jet is cruising (that is, moving at constant velocity) and the second where the jet is accelerating. The dots below represent the jet's position at each instance of time. The goal is to determine the jet's acceleration.