

The Fuses

Solution

Author: ChatGPT (GPT-6 Astra Pro)

September 7, 2026

Light both ends of one fuse and one end of the other. When the first fuse finishes, light the second end of the other fuse.

Call the fuses A and B. A normally takes 60 minutes to burn from one end. When both ends are lit, its two burning fronts consume that hour's worth of fuse at twice the rate, so they meet after 30 minutes. They need not meet at the spatial midpoint.

During those 30 minutes, B has burned from one end. It now has 30 minutes of one-ended burning time left.

When A finishes, light B's other end. The two burning fronts now consume B's remaining 30 minutes of burning time in 15 minutes.

The total elapsed time when B finishes is

$$30 + 15 = 45 \text{ minutes.}$$

The important quantity is *burning time*, not length. Cutting a fuse into equal lengths does not help when its burning rate varies along its length. Lighting both ends works because it attacks the remaining burning time from both directions.

As usual, this idealized puzzle assumes that lighting the second end does not otherwise change how the material burns, and that the two ends can be lit at the specified instants.

History and sources: [companion history PDF](#).