



## Problem of the Week

### Problem B and Solution

### Train Watching

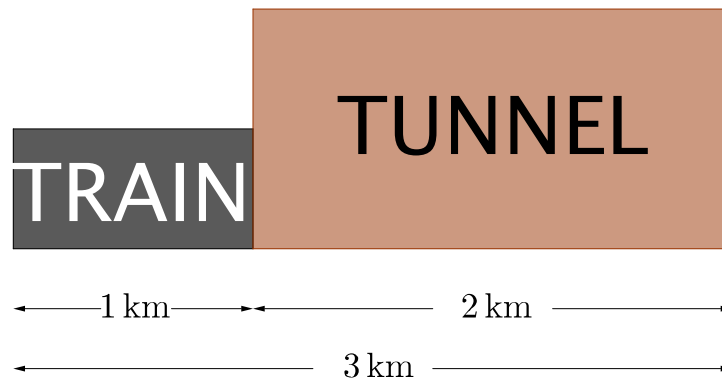
#### Problem

Henry loves to watch the trains enter, then leave the 2 km tunnel through the mountain across the valley from his home. One day, he sees the engine of a 1 km long train enter the tunnel at 12:10 p.m. If the train is travelling at 60 km per hour, at what time will Henry see the caboose leave the other end of the tunnel?

#### Solution

As the front of the engine enters the tunnel, the back of the caboose is 1 km from the entrance of the tunnel and  $1 + 2 = 3$  km from the other end of the tunnel. The caboose must travel a total of 3 km.

To travel 3 km at 60 km per hour, it will take the caboose  $3 \div 60 = \frac{1}{20}$  of an hour, or 3 minutes. Alternatively, since the train travels at 60 km per hour, it travels 60 km in 60 minutes or 1 km each minute. So to travel 3 km the caboose will take 3 minutes.



Henry will see the caboose leave the other end of the tunnel 3 minutes after 12:10 p.m., that is, at 12:13 p.m.

