

## I-125

*A decorative light fixture in an elevator consists of a 2.0 kg light suspended by a cable from the ceiling of the elevator. From this light, a separate cable suspends a second 0.80 kg light. The elevator is moving downward at 4.0 m/s when someone presses the emergency stop button. During the stop, the upper cable snaps. The elevator engineer says that the cable could withstand a force of 40 N without breaking.*

### Free-Body Diagrams

#### Mathematical Analysis

*the top light*

*the bottom light*

Event 1:

Event 2:



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