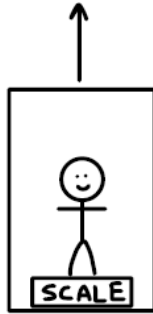


Elevator Problems

Elevator Problems



- A scale reads the normal force
- The normal force is equal to your apparent weight

A 70 kg person is standing on a scale in an elevator.

- What will the scale read if he is at rest?
- The elevator accelerates upwards at 0.70 m/s^2 . What will a scale read?
- After reaching a speed of 1.0 m/s . The elevator travels at a constant velocity for 12 s. What is his apparent weight during this time?
- After moving upwards at 1.0 m/s for 12 s, the elevator slows down to a stop over 2.5 s. What is his apparent weight?

- 12. A person weighing 490 N stands on a scale in an elevator.
- What does the scale read when the elevator is at rest?
 - What is the reading on the scale when the elevator rises at a constant velocity?
 - The elevator slows down at -2.2 m/s^2 as it reaches the desired floor. What does the scale read?
 - The elevator descends, accelerating at -2.7 m/s^2 . What does the scale read?
 - What does the scale read when the elevator descends at a constant velocity?
 - Suppose the cable snapped and the elevator fell freely. What would the scale read?

Answers 1 a) 686N b) 735N c) 686N d) 658N

12 a) 490N b) 490N c) 380N d) 360N e) 490N f) 0N