ELEVATOR PHYSICS ACTIVITY

Purpose: To determine the relationship between Fg and Fn in an elevator undergoing uniform and non-uniform motion.

It is expected: How will Fn compare to Fg when the elevator is accelerating upwards? Accelerating downwards? Moving at a constant rate?

Materials:

* Elevator
* Newton Scale

Procedure:

1. One person should stand on the Newton scale in the elevator at rest. Record Fg and Fn.
2. Move the elevator upwards. Read the Newton scale while the elevator is accelerating upwards and record the value of Fn.
3. Move the elevator downwards. Read the Newton scale while the elevator is accelerating downwards and record the value of Fn.
4. Read the Newton scale while the elevator is travelling at a constant rate and record the value of Fn.

Observations:

Make a chart to record your observations of the force of gravity and the normal force.

Calculations:

Draw free-body diagrams of a person in an elevator accelerating upwards, accelerating downwards, and moving at a constant rate. For each free-body diagram, determine the relationship between Fg and Fn.

Errors: Identify errors that affected this activity and outline any suggestions to improve this activity. There is no percent error calculation.

Conclusion: Write one that outlines the procedure and states the findings. No percent error.

No Discussion!