

Mechanics Module 3 Activity 2

Preparation

Take a ride in one of the elevators in the tower of the Physics building, McLennan Labs. Observe the spring scale with a mass hanging from it as the elevator goes up and down the tower.

Fill in your observations in the table below. Please bring the completed form to the Practical.

Date: _____.

Elevator number (1 through 4): _____.

Lowest floor when you were in the elevator _____.

Highest floor when you were in the elevator _____.

Write down the reading of the scale when the elevator is at rest. Include an uncertainty in the value.

When the elevator starts from rest and starts moving to a higher floor, the mass will oscillate around some central value. Write down that central value and an uncertainty in this value.

Write down the central value and uncertainty when the elevator is moving up and slows down as it approaches a floor where it will stop.

Write down the central value and uncertainty when the elevator starts from rest and starts moving to a lower floor.

Write down the central value and uncertainty when the elevator is moving down and slows down as it approaches a floor where it will stop.

[Challenge Problem (not for credit): From your observations in the elevator *alone*, and the knowledge that the mass was 750 g, can you deduce the distance between the basement and the 14th floor?]

