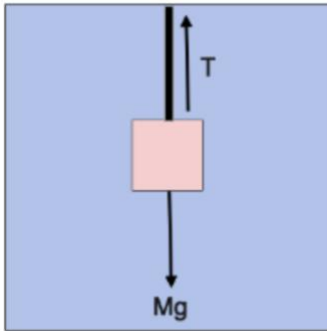


Physics Problem Set 2

Use 10 m/s/s for g . Ignore air resistance.

1. A 2 kg block is suspended from a string attached to the ceiling of an elevator. The elevator is initially not moving.



- a. What is the weight of the block?
- b. What is the tension in the string?

The elevator starts to accelerate upward at a rate of 2 m/s/s .

- c. What is the weight of the block while the elevator is accelerating?
- d. What is the net force on the block while the elevator is accelerating?
- e. What is the tension in the string while the elevator is accelerating?

After accelerating for 3 seconds the elevator moves upward with constant velocity.

- f. What is the velocity of the elevator?
- g. How far did the elevator move during the 3 seconds it was accelerating?
- h. What is the weight of the block when the elevator is moving with constant velocity?
- i. What is the tension in the string when the elevator is moving with constant velocity?