

Name:

Sec.# (7) ---Quiz (5), Ch#5&6

S.N:

ID# :

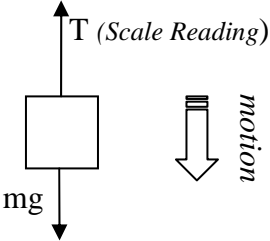
Key

Phys 101 (Term 041)-(F. Enaya)

Show your steps clearly for full credit.

Q. An object is hung from a spring balance attached to the ceiling of an elevator. The balance reads 80 N when the elevator is at rest.

- Draw the free body diagram of this problem.
- What is the reading of the spring balance when the elevator is moving downwards with an acceleration of $4.9 \text{ m/(s}^2\text{)}$?

a	b
	<p>When at rest : $T = mg = 80 \text{ N} \Rightarrow m = 80/9.8 = 8.2 \text{ kg.}$</p> <p>When moving Down : $mg - T = ma \Rightarrow 80 - T = (8.2)(4.9)$</p> <p>$\Rightarrow T = 80 - 40.2 = 39.8 \text{ N}$</p> <p style="text-align: center;">T = 39.8 N</p>