

Name:

Sec.# (8) ---Quiz (5), Ch#5&6

S.N:

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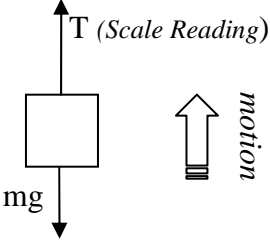
**Key**

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 moving upwards with an acceleration of  $4.9 \text{ m/s}^2$

- Draw the free body diagram of this problem.
- What is the reading of the spring balance when the elevator is at rest?

a	b
	<p>When moving Upwards : <math>T - mg = ma \Rightarrow 80 - m(9.8) = (m)(4.9)</math></p> <p><math>\Rightarrow 80 = m ( 9.8 + 4.9 )</math></p> <p><math>\Rightarrow m = 5.44 \text{ kg}</math></p> <p>When at rest : <math>T = mg = (5.44) \times ( 9.8 ) = 53.3 \text{ N}</math></p> <p style="text-align: center;"><b>T = 53.3 N</b></p>