

Name:

Sec.# (9) ---Quiz (5), Ch#5&6

S.N:

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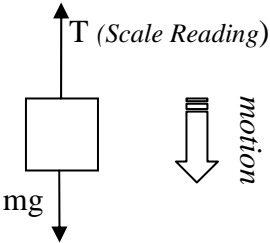
Key

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 60 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 a deceleration of 3.9 m/s^2 (is about to stop)?

a	b
	<p>When at rest : $T = mg = 60 \text{ N} \Rightarrow m = 60/9.8 = 6.12 \text{ kg}$.</p> <p>When moving Down : $mg - T = ma$, <i>but $a = - 3.9 \text{ m/s}^2$ (deceleration)</i></p> <p>$\Rightarrow 60 - T = (6.12)(- 3.9)$</p> <p>$\Rightarrow T = 60 + 23.9 = 86.9 \text{ N}$</p> <p style="text-align: right;">$T = 86.9 \text{ N}$</p>