An elevator starts from rest with a constant upward acceleration and moves 1 m in the first 1.9 s. A passenger in the elevator is holding a 5 kg bundle at the end of a vertical cord.
What is the tension in the cord as the elevator accelerates? The acceleration of gravity is 9.8 m/s2 .
Answer in units of N

Solution:
Let:
$h = 1m$
$t = 1.9s$
$m = 5kg$
$g = 9.8\,^m/_{s^2}$

$F-?$

$F = mg + ma,\ were\ a - acceleration\ of\ elevator$

$h = \frac{1}{2}at^2 => a = \,^{2h}/_{t^2}$

$F = m(g + \,^{2h}/_{t^2})$

$F = 5\left(9.8 + \,^{2*1}/_{1.9^2}\right) = 51.77N$

Answer: 51.77N