P #34

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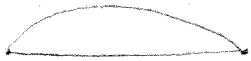
$L = .7000\ m$

$m = 4.300 \times 10^{-3}\ kg$

$f_c = 261.6\ Hz$

Find λ: 

$\lambda = 2 \cdot L$ (for fundamental frequency)

$= 2 \cdot (.7000\ m)$

$\lambda = 1.4\ m$

Find v: $v = f \cdot \lambda$

$= (261.6\ Hz)(1.4\ m)$

$v = 366.24\ m/s$

Find T: $v = \sqrt{\frac{T}{\mu}}$

$(366.24\ m/s) = \sqrt{\frac{T}{(4.3 \times 10^{-3}\ kg)/(.7\ m)}}$

$T = 824\ N$