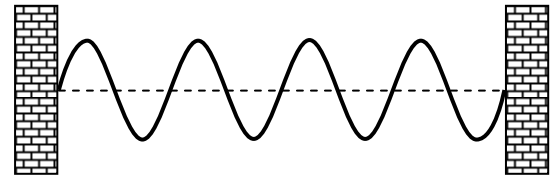


Quiz #1

Name: _____

The figure shows a string at one time. The ends of a piece of string are glued to two facing walls. The tension in the string is known to be 10 N. The distance between the two walls is 0.4 m.



1. How many total nodes are present at this time? $\# =$ _____
2. How many anti-nodes are shown? $n =$ _____
3. What is the wavelength at the time shown? $\lambda =$ _____ m
4. How are wave velocity v , frequency f , and wavelength λ symbolically related?
 $v =$ _____
5. The mass of the string per unit length (μ) can be found from the tension and the velocity. Write this symbolic equation for μ :
 $\mu =$ _____
6. The frequency of this wave is $f = 160$ Hz. What is the wave speed?
 $v =$ _____ m/s
7. What is the mass of the string per unit length? $\mu =$ _____ kg/m
8. Using your value of μ , and assuming that the length of the string is the same as the distance between the two walls, find the mass of the string:
 $m =$ _____ kg
9. If μ and λ are known constants, and you plot tension vs. f^2 , what is the *symbolic* slope of the resulting line?
slope = _____
10. Since you have numbers for μ and λ above, use them to determine the numeric slope corresponding to question 9.
slope = _____ kg·m