Name:_____

Period:_____

## (Part 1) Verifying Interference Concepts

Load '**Sound**' simulation at https://phet.colorado.edu/en/simulation/sound

Use the 'Measure' tab

1) Create a situation where you can measure waves that measure 0.5m long
   a) What setting(s) did you use?

Use the 'Two Source Interference' tab

1) Describe clearly where you place the person so he hears:
   a) constructive interference

   b) destructive interference

   c) Write an equation for case b) and provide a very simple (no sine waves necessary) sketch to support your equation.

## (Part 2) Transverse Standing Waves

Load **'Wave on a String'** simulation at https://phet.colorado.edu/en/simulation/wave-on-a-string

1) What boundary condition(s) cause the reflected wave to flip over?

2) What does **increasing the Tension** do to the **wave speed** as it travels across?

   a) What does **increasing the Tension** do to λ? and what equation made this predictable?

3) Does the **Amplitude** affect the λ, or **wave speed**?

4) Create standing wave situations (so bumps appear to not drift over time)
(Use ruler(s) and/or timer/play/pause/step to help you figure this out.)

Remember: $f = n\frac{v}{2L}$ , $n = 1, 2, 3, \ldots$

a) **for n=4**
v =
L =
f =
λ =
n = 4

b) **for n=6**
v =
L =
f =
λ =
n = 6

Attach a screen shot of an n=4 case to this sheet. (There are many solutions!)