

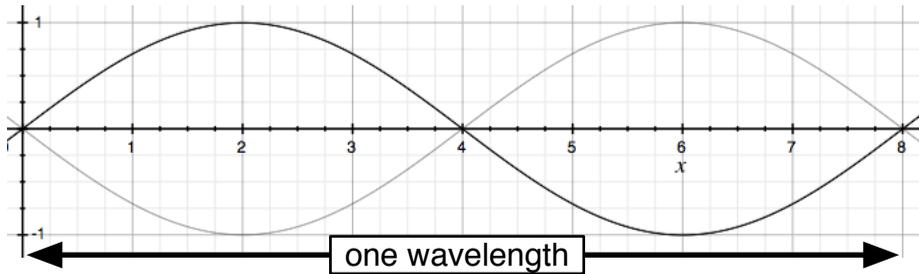
Wk 34 Musical Instruments

name: _____

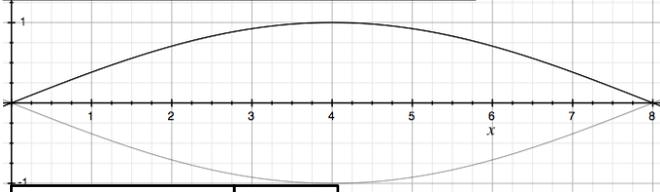
1. Standing Waves

1. When do standing waves happen?

2. a) Label the nodes & antinode.
b) Which one is destructive interference?
c) Which one is constructive interference?

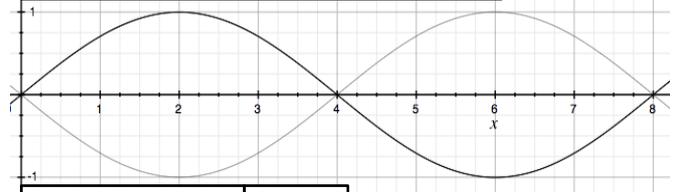


1st Harmonic (2 fixed ends)



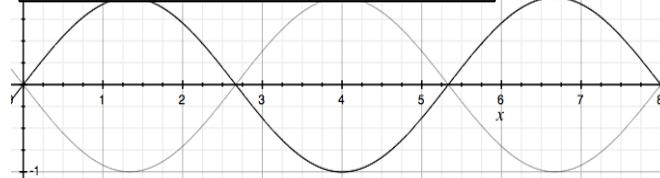
# of wavelengths	
# of nodes	
# of antinodes	

2nd Harmonic (2 fixed ends)



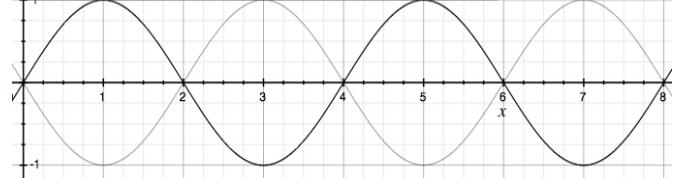
# of wavelengths	
# of nodes	
# of antinodes	

3rd Harmonic (2 fixed ends)



# of wavelengths	
# of nodes	
# of antinodes	

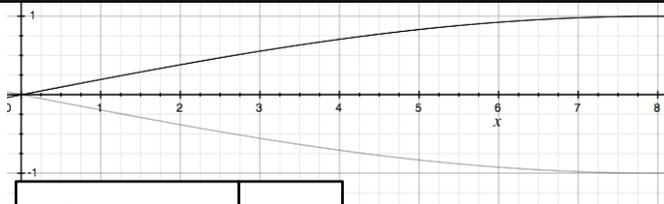
4th Harmonic (2 fixed ends)



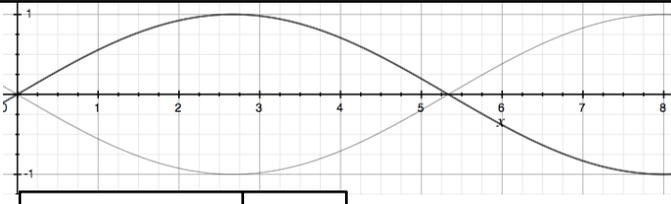
# of wavelengths	
# of nodes	
# of antinodes	

3. For each of the Harmonics above:
b) Which one is the highest frequency?
c) Which one is the lowest frequency?

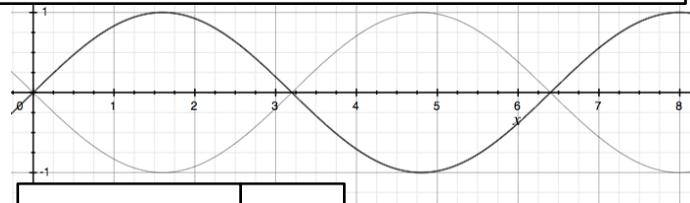
4. Give an example of an instrument with two fixed ends.

1st Harmonic (1 fixed end, one open end)

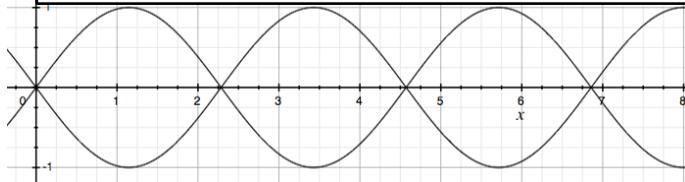
# of wavelengths	
# of nodes	
# of antinodes	

2nd Harmonic (1 fixed end, one open end)

# of wavelengths	
# of nodes	
# of antinodes	

3rd Harmonic (1 fixed end, one open end)

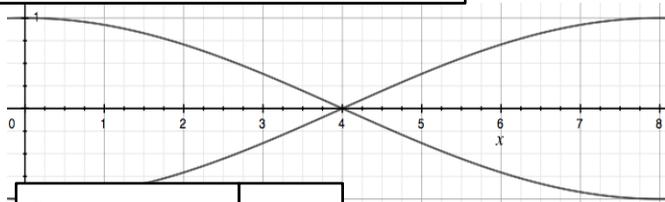
# of wavelengths	
# of nodes	
# of antinodes	

4th Harmonic (1 fixed end, one open end)

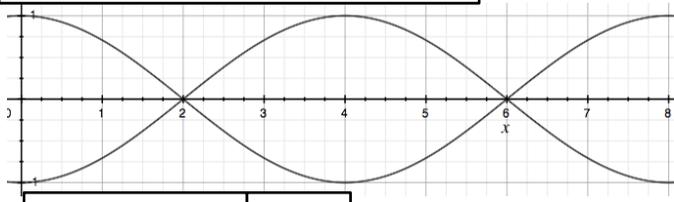
# of wavelengths	
# of nodes	
# of antinodes	

5. Give an example of an instrument with one fixed end, one open end.

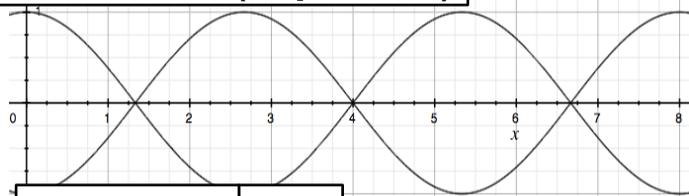
4. Give an example of an instrument with two open ends.

1st Harmonic (2 open ends)

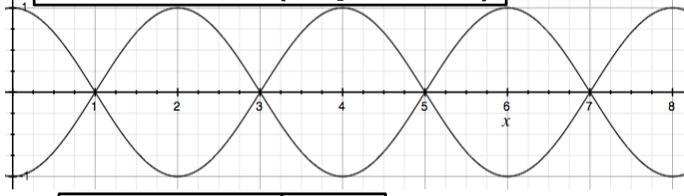
# of wavelengths	
# of nodes	
# of antinodes	

2nd Harmonic (2 open ends)

# of wavelengths	
# of nodes	
# of antinodes	

3rd Harmonic (2 open ends)

# of wavelengths	
# of nodes	
# of antinodes	

4th Harmonic (2 open ends)

# of wavelengths	
# of nodes	
# of antinodes	