Open-Closed Pipes/Strings Worksheet **Name _____**

Open pipes:

	3rd harmonic	2nd harmonic	4th harmonic
Length	3.4 m		
λ			1.04 m
Temp	18°	37°	
Velocity			
f		218 Hz	312 Hz

Open pipe:

	Fundamental	5th harmonic	3rd harmonic
Length		1.68 m	
λ			0.75 m
Temp	16°		24°
Velocity		347.7 m/s	
f	68.3 Hz		

Closed Pipes:

	Fundamental	5th harmonic	9th harmonic
Length		0.82 m	
λ			0.75 m
Temp	21°		20°
velocity			
f	68.3 Hz	502 hz	

Fill in the table:	tube/string length	wavelength	frequency	speed	temperature
	360 cm	_____	_____	_____	_____
	_____	_____	405 Hz	315 m/s	_____
	_____	42 cm	_____	_____	21°C

Pipes and Loudness

Type	Pipe Length (m)	Air temp (°C)	Harmonic	Velocity (m/s)	Frequency (Hz)	Wavelength (m)
Open	0.76		3rd	314.0		
Closed		26.0	3rd		173.3	
Open	0.44	15.5	5th			
Open	2.60			339.2		1.04
Open		21.0	1st		202.1	
Closed	3.20	23.4			242.6	
Closed			7th	345.0		0.30
Closed	6.00			348.5	72.6	
Open	2.20	29.2				2.20