Harmonics Algebra Name _____

Draw the first five harmonics in a wave on a string:

First	
Second	
Third	
Fourth	
Fifth	

There is a wave on a string.
The fundamental frequency is 20 Hertz.
The length of the string is 2.5 meters.
Fill out the following table:

Harmonic	**Frequency**	**Wavelength**	**Speed**
First			
Second			
Third			
Fourth			
Fifth			
Sixth			
Seventh			
Eighth			

Harmonics Algebra Name _____

There is a wave on a string.
The fundamental frequency is f_1 .
The length of the string is L.
Fill out the following table in terms of f_1 and L.
[these are the known quantities]

Harmonic	**Frequency**	**Wavelength**	**Speed**
First			
Second			
Third			
Fourth			
Fifth			
Sixth			
Seventh			
Eighth			

Based upon the table that you created, determine two new formulas:
If f_n is the n^{th} harmonic, determine a formula for f_n in terms of f_1 and n.

If λ_n is the wavelength of the nth harmonic, determine a formula for λ_n in terms of L and n.