Math In Music Tasksheet

January 3, 2014

Name:_____Period:_____

1. Complete the following table:

Musical Symbol	Description
	
	
	
	
	
	
	
$\frac{4}{4}$	
$\frac{2}{2}$	
$\frac{6}{8}$	

2. The note A which is 9 white keys below middle C has a frequency of _____ hz.

3. In order to find the frequency of the note that is a half step up from A (440 hz), you will multiply the frequency of A by $2^{1/12}$. For example, $440 * 2^{1/12} = 466.1636151809$. So the frequency of A sharp is about 466.164. To find the frequency of the note a half step higher than A sharp (which is B), you now multilply 466.164 by $2^{1/12}$ and so on.

   Using this information, fill in the table below.

Note	Frequency (hz)
A	440
A sharp	
B	
C	
C sharp	
D	
D sharp	
E	
F	
F sharp	
G	
G sharp	
A	

4. To calculate the tempo of a song, you can use proportions. For example, if there are 12 beats for every 10 seconds, and you want to determine how many beats this would be per minutes, you must solve the following proportion:

$$\frac{12\ beats}{10\ seconds} = \frac{x\ beats}{60\ seconds}$$

   a. For the first song that your teacher plays for you, count the number of beats in 10 seconds and use a proportion to find the number of beats per minute (tempo).

   _____ = _____

   b. For song #2, count the number of beats in 12 seconds and use a proportion to find the number of beats per minute.

   _____ = _____

   c. For song #3, count the number of beats in 18 seconds and use a proportion to find the number of beats per minute.

   _____ = _____