The Math...Period

The relationship between frequency and period can be easily seen by looking at the math. Make sure to review the definitions for both.

$$Frequency\ (Hz) = \frac{1}{Period\ (T)}\ ;\ Period\ (T) = \frac{1}{Frequency\ (Hz)}$$

Fill in the missing period or frequency using a calculator and the equations above.

Period	Frequency	Example work
2.0 seconds	0.5 Hz	$\frac{1}{2} = 1 \div 2 =$
0.25 s	4 Hertz	$\frac{1}{4} = 1 \div 4 =$
4.0 s	0.25 Hz	
0.33 s	3.03 Hz	$\frac{1}{0.33} =$
0.00136	738 Hz	
.01297 s	77.1 Hz	
73.8 s	.01355 Hz	
.000765 s	1307.2 Hz	

I. A group of students is on a field trip to an art museum. In one of the rooms is a huge pendulum. They decide to collect data on the period. They want to also find out the frequency of the huge pendulum. Here's what they got. Complete the table.

Period (T) Trial 1	Period (T) Trial 2	Period (T) Trial 3	Period (T) Average	Frequency
5.67 s	5.62 s	5.64 s	5.64	0.177

How long would they have to run across the equilibrium point without getting hit with the pendulum? *Of course they would have never tried it!*

Is it possible to write an inequality for this problem?
Remember, we do math *periodically* in science.

Wave Properties

Use the 1- centimeter grid paper to complete the following. The first wave is the example wave. Number the waves.

1. Example wave: wavelength 2 cm Amplitude 1 cm Frequency 36 Hz
2. Double the wavelength of the example wave
3. Draw a wave with 1/2 of the amplitude of the example wave.
4. Double the frequency of the example wave. *
5. Draw a wave with wavelength 3 and amplitude 2
6. Draw a wave with wavelength 4 and amplitude 0.5

* you only have to do half of the line of waves