

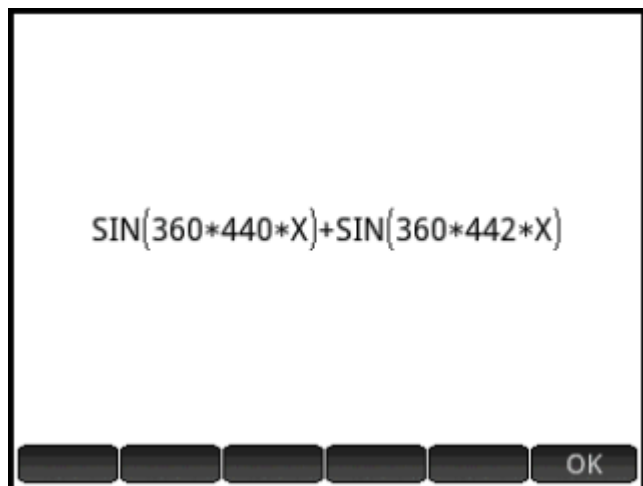
# HP Prime Application Note Physics:

## 05. Beats

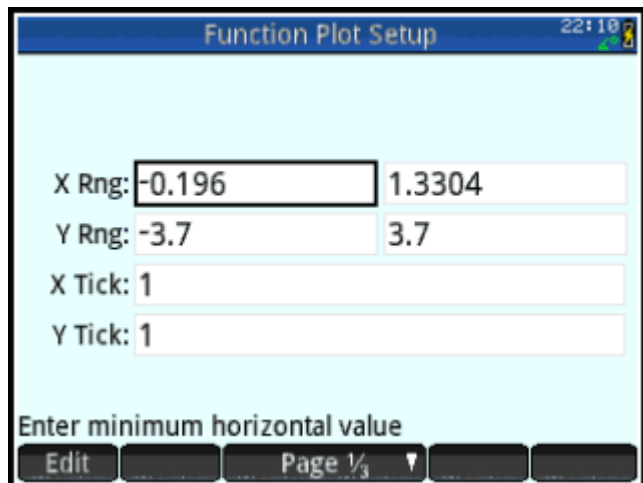
When you sound two tuning forks, which slightly differ in frequency, you will perceive beats. For example, watch James Lincoln's *Top 10 Demonstrations with Tuning Forks* at <https://www.youtube.com/watch?v=vNuDxc9tZMk>. In demonstration #6, you will hear the sound of two beating tuning forks. Using the HP Prime, you can visualize the wave form of the beating sound. Let use two tunings forks, one with a frequency of 440 Hz and the other one with a frequency of 442 Hz. Using degrees, the formula of the wave form is:

$$y(t) = \sin(360 \cdot 440 \cdot t) + \sin(360 \cdot 442 \cdot t)$$

For variable  $t$ , we take the  $x$  axis:



First, set the HP Prime to degrees and specify the  $x$  and  $y$  ranges:



Draw the formula representing the beats by using the Plot key:

