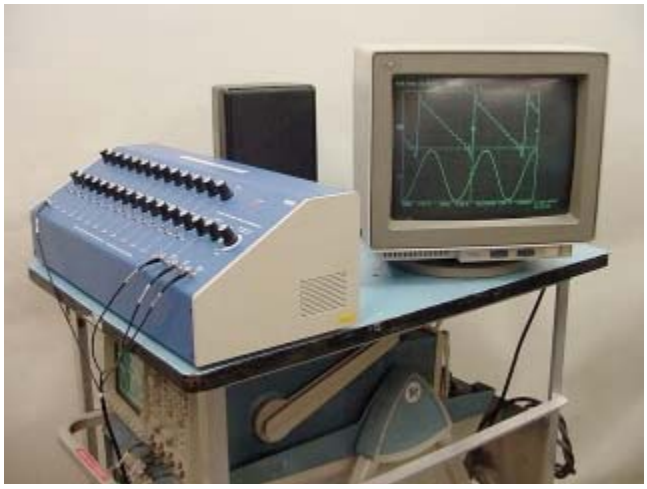
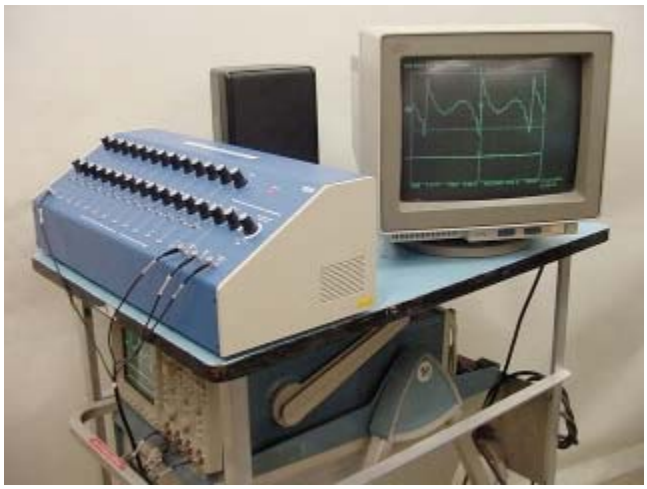
Question #340

The *Fourier synthesizer* seen at the left in the photograph below produces a sawtooth wave, as seen on the computer monitor. The sawtooth wave is shown on the upper trace of the scope and the actual amplitude of first harmonic in the sawtooth seen is shown on the lower trace. Click on the photograph below to hear the sound of the sawtooth wave.



The sawtooth wave is synthesized with all the components of the fundamental frequency's overtone series, with the amplitudes of the components being inversely proportional to the harmonic number.



When we remove the fundamental frequency from the synthesized wave, as seen in the photograph above, which of the following will happen?

- (a) The sound will go up one octave.
- (b) The sound will go down one octave.
- (c) The sound will remain at the same pitch but with a different timbre.
- (d) The sound will remain virtually unchanged: the same pitch and the same timbre.
- (e) Other. (You must explain.)

Click here for Answer #340 after March 23, 2009.

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page

For questions and comments regarding the *Question of the Week* contact Dr. Richard E. Berg by e-mail or using phone number or regular mail address given on the Lecture-Demonstration Home Page.