

Vertical Sensitivity

- j. Do not touch the controls of the function generator but set the sensitivity of the scope to 0.2 ms/div. and set the vertical sensitivity to 2 V/div. Using this latter sensitivity, calculate the peak-to-peak value of the sinusoidal waveform on the screen by first counting the number of vertical divisions between peak values and multiplying by the vertical sensitivity.

(calculated) Peak-to-peak value = _____

- k. Change the vertical sensitivity of the oscilloscope to 0.5 V/div. and repeat Part 2(j).

(calculated) Peak-to-peak value = _____

- l. What was the effect on the appearance of the sinusoidal waveform as the vertical sensitivity was changed from 2 V/div. to 0.5 V/div.?

Did the peak-to-peak voltage of the sinusoidal signal change with each vertical sensitivity? What conclusion can you draw from the results regarding the effect of changing the vertical sensitivity on the output signal of the function generator?

- m. Can the peak or peak-to-peak output voltage of a function generator be set without the aid of an auxiliary instrument such as an oscilloscope or DMM? Explain.

Part 3. Exercises

- a. Make all the necessary adjustments to clearly display a 5000-Hz 6 V_{p-p} sinusoidal signal on the oscilloscope. Establish the zero volt line at the center of the screen.
Record the chosen sensitivities:

Vertical sensitivity = _____
Horizontal sensitivity = _____

Draw the waveform on Fig. 1.1 carefully noting the required number of horizontal and vertical divisions. Add vertical and horizontal dimensions to the waveform using the chosen sensitivities listed above.

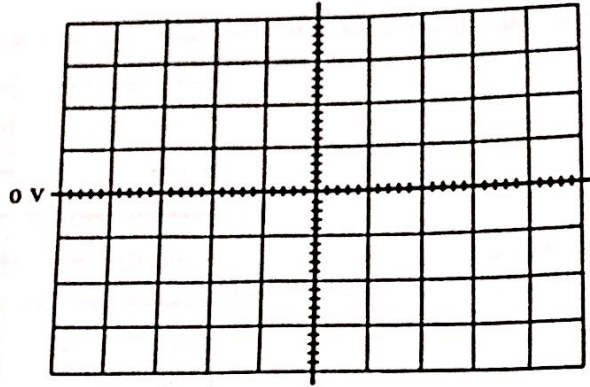


Figure 1-1

Calculate the period of the waveform on the screen using the number of horizontal divisions for a full cycle as shown.

T (calculated) = _____

- b. Repeat Part 3(a) for a 200-Hz 0.8 V_{p-p} sinusoidal waveform on Fig. 1.2.

Vertical sensitivity = _____

Horizontal sensitivity = _____

T (calculated) = _____

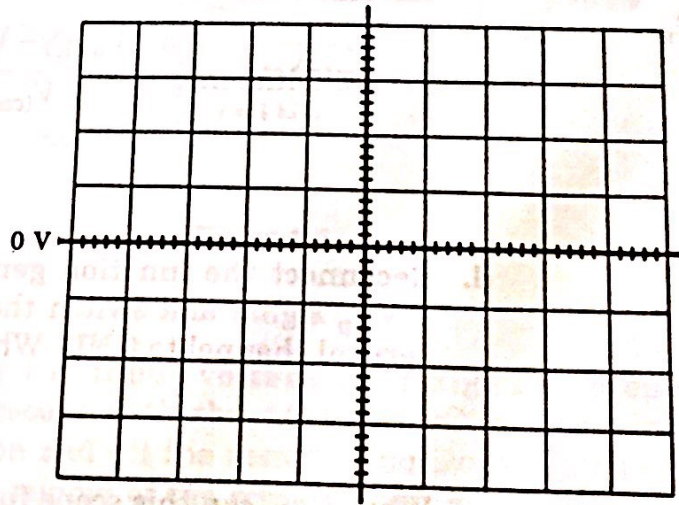


Figure 1-2

- c. Repeat Part 3(a) for a 100-kHz 4 V_{p-p} square wave on Fig. 1.3. Note that a square wave is called for.

Vertical sensitivity = _____

Horizontal sensitivity = _____

T (calculated) = _____