1. Plot the following voltage signals on the grids below. **PLEASE USE THE SCALE SHOWN – V is 0.5 volts/box (vert) and t is 1millisecond/box (horiz).**

(a) \( V_1(t) = \sin(2 \pi 1000 t) \)
(b) \( V_2(t) = \sin(2 \pi 500 t + \frac{\pi}{4}) \)
(c) \( V_3(t) = \sin(2 \pi 500 t + \frac{\pi}{4}) - 0.5 \)
2. What is the $V_{pp}$ across the 100 Ω in the diagram below?

![Diagram](image)

$V_{pp} = \underline{\text{[Blank]}}$

3. Describe what the oscilloscope does after graphing the voltage over a single time interval, for the following three triggering modes:

Normal:

Auto:

Single: