Two undergraduate students working on very different projects share one oscilloscope. Michaela works on high-frequency circuits, which are designed to drive 50 Ω loads via 50 Ω coax cables. Audie works on audio amplifiers optimized to drive 8 Ω speakers, and needs to see the amplifiers’ output voltage waveforms with the speakers connected. For each of the oscilloscope’s input channels, there is a selector switch that allows the user to select between 50 Ω and 1 MΩ input impedances. Here, the input impedance refers to the equivalent impedance looking into the input channel. To make the best use of the oscilloscope, which impedance should Michaela choose? Which should Audie choose? Explain the rationale for both choices.

Send your answers to the TA: ffroug1@vols.utk.edu