Name: _____

MUS 348 / EE 480

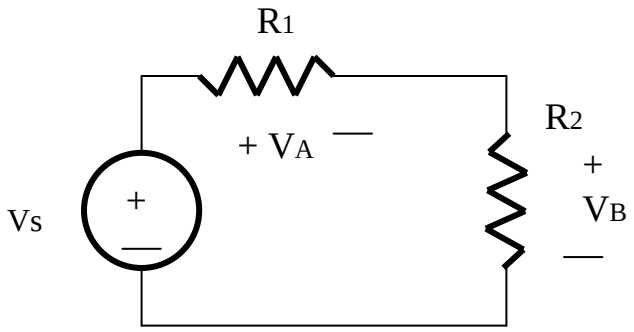
Spring 2010
Lab experience #3

Procedures

P1. Use the function generator and the oscilloscope to produce and display the following waveforms:

- A sinusoid 2 volts peak to peak at 1000 Hz
- A square wave 300 mV peak to peak at 20 kHz

P2. The circuit shown below is called a *voltage divider*, because the applied voltage is split between R1 and R2.



Mathematically, $VB = \frac{R2}{(R1+R2)} Vs$ and $VA = \frac{R1}{(R1+R2)} Vs$.

Here is your design task:
A professional studio system operates with a nominal signal level that is higher ("hotter") than the nominal level for consumer audio gear. Later in the course we will talk about the meaning of pro gear being standardized to +4 dBm, while consumer gear is typically rated as -10dBV. The issue is that we want to reduce the voltage from a pro audio source to be a level suitable for the input of a consumer audio device.

→ You need to select resistors R1 and R2 so that VB is approximately to 0.13 times Vs.

R1 = _____ R2 = _____

$\frac{R2}{(R1+R2)} =$ _____

Now set up the voltage divider on your breadboard so that the function generator is Vs. Use oscilloscope channel 1 to show Vs, and adjust the function generator to produce 5V peak to peak sinewave at 1 kHz. Use oscilloscope channel 2 to show VB. Verify that VB is approximately 0.13 times Vs.