Name:
Date:

Circuit #4 Multiple LEDs

1.

How is this circuit, or a circuit like it, used in everyday life? Provide at least three examples.

Did you get your LED turned on?
Great. Now you are going to add a dimmer switch to your LED on pin # 9.

2.

What user interface component will you need to use as a dimmer?

3.

Add the necessary text to the *oneOnAtATime( )* method for the code heavy way to add the dimmer.

4.

There are three different way to add a dimmer without changing or adding code. Try to find one of these ways without destroying your LED.

5.

Draw a schematic of your circuit in the space to the right, adding your dimmer component so that it works. There are four different ways to do this.

6.

What other component does the dimmer component in this circuit act as?

7.

The LED needs a PWM value that ranges from 0 – 255. The dimmer component gives you values from 0 – 1023. Write an equation below that will convert the value the dimmer component outputs to a LED friendly value.

8.

The LED values 0 – 255 actually represent 256 different values. Why is that?

9.

Imagine your LED circuit (without dimmer) as a meter indicating a sensor reading. Decide what kind of sensor you would like to use as an input and describe in your own words what would cause the meter to rise and fall.

5.

Draw a logic flow chart of the LED with dimmer:

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