Verification Strategy:

For part 1:

Set a breakpoint at the first instruction of the main_loop to make sure the post_display subroutine executes before it. Use the IO window to check the TCA0_INTFLAGS overflow flag to make sure it is set when the subroutine is called. The counter is set to approximately 1 second, so its operation should be easily visible on the 7seg display. Verify with the oscilloscope that the timing is correct

For part 2:

Set the trimpot to zero and verify that the 7seg display is showing zero. Then slowly increase the trimpot in 0.5V increments up to 3.0V. Verify with a calculator that the conversion is correct for each increment. Ensure that the trimpot outputs the desired voltage by connecting its output to the multimeter or the oscilloscope.

For part 3:

Start out by measuring the ambient room temperature and use a calculator to convert from hexadecimal. Make sure that the calculated temperature makes sense. Heat the thermometer up with your hand and record the temperature. Cool it down with a cold can and record the temperature again. Convert all the values to decimal and then to Celsius. Make sure they make sense.

For part 4:

Similar to part 3, measure the temperature at room temperature, body temperature, and cold can temperature. Make sure the temperature measurements are correct.