

(10 pts) Approx. 2 days

As we get ourselves ready to tackle The Birthday Problem, it is essential that we review six key components of the circuit design process that we've covered this semester. In this first part to our unit, you'll just review those key concepts. The website has some videos and presentations that we looked through earlier this semester for you to use as a review tool. You've already seen most of them, so if you want to skip around and review your own notes or other things instead, that's fine. In the end, you should end up with some detailed notes though.

1. **Circuit Design Process Notes:** Take a full page of notes on the Circuit Design Process. Start by copying the flow chart into your engineering notebook. Then, add some of your own personal notes in connection with each step to help you remember what you've already learned and how the different parts all fit together.
2. **Review Notes 1:** There are six (6) big topics that we need to review before diving into the Birthday Problem. Take a page of notes on the first three big topics. A few thoughts on each are provided here to get you thinking, remembering, and writing:
  - a. **7-Segment Displays:** Don't forget the naming of each segment, and the fact that we were looking at how to control these with display drivers.
  - b. **Binary Counting:** This has funny video on our website, watch it and remember how we count in binary (in particular, how to count from 0 to 7 in a 3-bit binary system).
  - c. **Truth Tables:** Remember that we have  $2^n$  outputs if we have  $n$  inputs. We also use these to organize when lights/signals should be on/off.
3. **Review Notes 2:** Take a second page of notes on the last three big review ideas. You can re-watch the videos and presentations if you find that helpful, or you can research and recreate your own notes on these topics.
  - a. **K-Mapping:** Remember the setup for K-mapping and the groupings we look for.
  - b. **AOI Circuit Design:** Remember what the symbols look like and what each of them means
  - c. **NAND/NOR Circuit Design:** Remember how we substitute NAND/NOR gates for the regular AOI gates in a circuit!

Part 1: Tasks	4 points	3-2 points	1-0 points
 Circuit Design Process Notes	+ You took a full page of notes on the Circuit Design Process + Your notes include some of your own thoughts on those steps as you remember them from last semester	- Your notes are only the picture from the website	- Very brief or no notes in your engineering notebook
 Review Notes 1	+ Your notes include details and reminders about: + 7-segment displays + Binary counting + Truth Tables	- Your notes are missing one of the elements	- Your notes are missing more than one element
 Review Notes 2	+ Your notes include details and reminders about: + K-Mapping + AOI Circuit design + NAND/NOR Circuit design	- Your notes are missing one of the elements	- Your notes are missing more than one element

