

Name + pledge: \_\_\_\_\_ Grade: \_\_\_\_\_ / 10

## **How are Microchips made? ([Branch Education, YouTube 2024](#))**

1. What is the approximate number of steps required to manufacture a modern CPU chip?
2. What type of transistor structure is commonly used in today's CPUs, and how small are they?
3. What are the six main categories of fabrication tools used in a semiconductor fab?
4. How does chip "binning" affect the product lines (e.g., i9, i7, i5)?
5. Why is photolithography considered one of the most important steps in chip fabrication?

## **Review: Making logic gates from transistors ([Ben Eater, 2015](#))**

1. What are the three terminals of a transistor and what do they represent?
2. What happens in the LED circuit when current flows from the base to the emitter?
3. Which logic gate does a single transistor implement when it inverts the input?
4. How is an AND gate built with two transistors?
5. What is the difference between an OR gate and an XOR gate?