

**Directions:** For each item below, give a complete response that represents a good-faith effort to be right. You will receive a "check" if each item has such a response, and an "x" otherwise. An "x" will be given if *any* item is left blank, shows insufficient effort, or has responses such as "I don't know" or "I don't understand". Except for the final item (which is done by filling out a Google Form), do all work on separate pages, and submit a scanned black/white PDF to Blackboard. This item is due on Blackboard by 11:59pm ET Tuesday, September 8.

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1. Convert the decimal integer 55 into binary, octal, and hexadecimal. Show all your steps or explain your reasoning — don't just give the answers.
2. Convert the decimal integer 1367 into binary, octal, and hexadecimal. Show all your steps or explain your reasoning — don't just give the answers.
3. Review the "division/remainder" algorithm for converting integers from decimal to any base  $b$ , at <https://bit.ly/30AVHSa> (scroll down to "Algorithm to Convert from Decimal to Another Base"). Then use the algorithm to convert the decimal integer 90125 to hexadecimal. Show all the steps of the algorithm clearly — don't just give the answer.
4. In a **base 26** number representation, we'd use the digits 0-9 as usual and then all 26 letters of the alphabet with A = 10, B = 11, and so on through Z = 25. Use the division/remainder algorithm to convert 90125 to base 26.
5. Fill out the response form at <https://bit.ly/3a4fexD>.