1. What is the range of a 9-bit unsigned integer?
   1. The range is from 0 to (2^9)-1 or **0 to** **511**.
2. What is the range of a 9-bit signed integer?
   1. The range is from -2^8 to 2^8-1 or **-256 to 255**
3. What is the binary representation of decimal 125 as a 9-bit unsigned integer?
   1. **001111101**. I derived this by finding the largest power of 2 less than the original number and then subtracting and repeating. This processes looked like this: 125 – 2^6 = 61. 61 – 2^5 = 29. And so on. Then, I filled in each digit appropriately where if I used that power, the digit would be a 1.
4. What is the binary representation of decimal 125 as a 9-bit signed integer?
   1. For a nine-bit signed integer, since the number is less than 2^8 and positive, the answer remains the same: **001111101**
5. What is the binary representation of decimal -125 as a 9-bit signed integer?
   1. To obtain the negative counterpart, I found the 1’s complement and then added one. This gave an answer of: **110000011**