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CS 161

Week 2 exercises

1. a. 011

   b. 111

   c. 1010

   d. 110010

   e. 1011110

   f. 11000000

2. a. 2

   b. 13

   c. 58

   d. 227

3. a. 11

   b. 111

   c. 1010

   d. 110010

   e. 1011110

   f. 11000000

4. a. 11111101 -3

   b. 11111001 -7

   c. 11110110 -10

   d. 11001110 -50

   e. 10100010 -94

   f. 01000000 -192

   Flip it's binary number, then add 1 to get the negative two's compliment number

5. Adding these 2 numbers would give you 194, which is 11000010. But 11000010 is not represented in our 8-bit twos complement system as a positive number, so this causes an over flow condition. It is detected and will cause and report as an error to the system.

6. Adding these two numbers together would give you a POSITIVE twos complement number, and the 9th digit will not be represented by the system. This will also cause an over flow condition, detectable, and cause an error report.

7. 1110 in binary computes to 14. 7 in decimal is 0111.

11100011 in binary computes to 227. 192 in decimal is 11000000. I'm not too sure how these are related.

8. Attached as .cpp. I did not run into any compiler error except for forgetting to add a few semicolons at certain places at the end of a line

9. Attached as .cpp.

I would say you can have this program down to 6 lines in main

I'm pretty sure.... 6 yes..

10. Attached as .cpp