

# Number base conversion and binary arithmetic

Please try to do these problems yourself. Make note of what you don't understand how to do.

1. Convert 201 base10 to 8-bit binary  
(1 Point)

2. Convert 201 base10 to base 3 using the division method (5-digit answer  
dddddd)  
(1 Point)

3. Convert 11 1110 0111 binary to hexadecimal  
(1 Point)

4. Convert C0FE base16 to binary (answer with space between 4 digits: dddd  
dddd dddd dddd)  
(1 Point)

1100 0000 1111 1110

5. Compute  $1011\ 0101 + 0101\ 1011$  in regular binary (not sign-magnitude). Write your answer in 8-bit binary.

(1 Point)

0001 0000

6. Is there overflow in the previous question?

(1 Point)

☐ Yes

☒ No

7. Compute  $0010\ 1101 - 0001\ 0111$  (regular binary) Write your answer in 8-bit binary.

(1 Point)

0000 0000

8. Convert 105 base10 to 8-bit binary representation

(1 Point)

0110 1001

9. Convert -105 base10 to 8-bit signed magnitude representation

(1 Point)

0110 1001

10. Convert -105 base10 to 8-bit 2's complement representation  
(1 Point)

1001 0111

11. Convert 105 base10 to excess-M representation, (use the lowest possible M)  
(1 Point)

0110 0010

12. What areas do you think you need more practice on?  
(1 Point)

- ☐ base conversion
- ☐ binary arithmetic
- ☐ 2's complement representation
- ☒ excess-M representation
- ☐ signed-magnitude representation

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