

### Quiz 3: Number Representation

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Started: September 20, 2011 3:56 PM

Questions: 11

**Finish**

**Save All**

**Help**

#### Instructions

Readings for this quiz: 1.5 (Epp 3rd ed) or 2.5 (Epp 4th ed); also the [supplement on signed binary/decimal number conversion](#).

**SPECIAL FOR THIS QUIZ:** most questions are randomly generated. So, you can get lots of practice taking and retaking the quiz. However, Vista shows answers as decimal numbers (like 1,010 rather than 001010). Read its answers with caution!

These quizzes are open book. You may use any non-human aides, e.g., the textbook or web articles, to assist you. The first part is marked for completeness and correctness and to be completed individually with no assistance from anyone. The second part (of open-ended questions) is marked only for completeness. You may discuss these questions but must work individually when you write your answer.

Submit your quiz by its deadline (9PM on the due date). Only attempts submitted by that time will be marked. **It is your responsibility to submit the quiz by the listed time.**

Briefly acknowledge any assistance, including sources you quote or draw on directly. You need not acknowledge the text or course staff unless you quote them.

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#### 1-8 Marked for completeness and correctness

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1. (Points: 3)

What is the decimal representation of the unsigned binary number 111101?

**Answer**

**Save Answer**

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2. (Points: 3)

What is the 8-bit (unsigned) binary representation of the decimal number 32?

**Answer**

**Save Answer**

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3. (Points: 2)

What is the 4-bit binary sum of the two 3-bit binary numbers 101 and 000?

**Answer**

**Save Answer**

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4. (Points: 3)

What is the 6-bit signed binary representation of the decimal number 29?

**Answer**

**5.** (Points: 3)

What is the decimal value of the **signed** 6-bit binary number 101110?

**Answer**

**6.**(Points: 3)

What is the two's complement of the 6-bit binary number 110110 (as a 6-bit binary number)?

**Answer**

**7.** (Points: 4)

Complete the following table, converting the (unsigned) 8-bit binary numbers to hexadecimal or vice versa.

<b>8-bit binary number</b>	<b>2-digit hexadecimal number</b>
00000000	00
01011110	5E
01110110	<input type="text"/>
01001101	<input type="text"/>
<input type="text"/>	84
<input type="text"/>	EB

**8.** (Points: 3)

I completed this part of the quiz with no help from anyone, except possibly the course staff (as described in the academic conduct policy and the instructions for this quiz).

True  False

### 9-10 Marked for completeness

**9.**(Points: 10)

Imagine the time is currently 1500h, which we'll just call 15 for convenience. How could you quickly answer the following two questions without using a calculator:

- What time was it  $8 * 21$  hours ago?
- What time will it be  $13 * 23$  hours from now?

In case it helps, here's a 24-hour analog clock (from [World Time Server](#)).



1.

Save Answer

**10.** (Points: 10)

Can you be one-third Scottish?



1.

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**11.** (Points: 0)

Please acknowledge any sources/help you received, as described in the quiz's description above.

1.

2.

3.

4.

5.