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on Binary Addition and Two's Complement

Instructions: For each question, choose the single best answer. Make your choice by clicking on its button. You can change your answers at any time. When the quiz is graded, the correct answers will appear in the box after each question.

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1. In the following one-bit wide addition, what are the result R and the carry, C?

```
 C0
  0
  1
 --
  R
```

- **A.** C=0; R=0
- **B.** C=0; R=1
- **C.** C=1; R=0
- **D.** C=1; R=1

B

---

2. In the following one-bit wide addition, what are the result R and the carry, C?

```
 C1
  0
  1
 --
  R
```

- **A.** C=0; R=0
- **B.** C=0; R=1

- **C.** C=1; R=0
- **D.** C=1; R=1

C

---

3. Which one of the following is done correctly?

- **A.**

```
 0100
  0110
  0101
  ----
  1011
```

- **B.**

```
 0100
  0110
  0101
  ----
  1111
```

- **C.**

```
 0110
  0110
  0101
  ----
  1111
```

- **D.**

```
 0101
  0110
  0101
  ----
  1001
```

A

---

4. Which one of the following is done correctly?

A.

```
 0100
  1110
  1001
  ----
  1001
```

B.

```
 0000
  1110
  1001
  ----
  0111
```

C.

```
 0111
  1110
  1001
  ----
  1001
```

D.

```
 1000
  1110
  1001
  ----
  0111
```

D

---

5. Perform the following addition:

```
1100
0101
----
```

- (●) **A.** 0001 with a carry out of the left column of 1
- ( ) **B.** 0001 with a carry out of the left column of 0
- ( ) **C.** 1001 with a carry out of the left column of 1
- ( ) **D.** 1110 with a carry out of the left column 1

A

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6. Here is a two's complement representation of an integer:

```
0011 1001
```

What is the two's complement representation of the negation of the integer?

- ( ) **A.** 1100 0110
- ( ) **B.** 1011 1001
- ( ) **C.** 1100 1110
- (●) **D.** 1100 0111

D

---

7. Here is a two's complement representation of an integer:

```
1100 0111
```

What is the two's complement representation of the negation of the integer?

- ( ) **A.** 1100 0110
- (●) **B.** 0011 1001
- ( ) **C.** 0000 1110
- ( ) **D.** 0100 0111

B

---

8. Here is a correctly performed addition:

```
1100
```

```
 0100
 1110
 ----
 0010
```

What is true about overflow for this addition?

- **A.** If the operands are regarded as unsigned binary, then the result shows **no overflow**.
  If the operands are regarded as two's complement binary, then the result shows **no overflow**.
- **B.** If the operands are regarded as unsigned binary, then the result shows **overflow**.
  If the operands are regarded as two's complement binary, then the result shows **no overflow**.
- **C.** If the operands are regarded as unsigned binary, then the result shows **no overflow**.
  If the operands are regarded as two's complement binary, then the result shows **overflow**.
- **D.** If the operands are regarded as unsigned binary, then the result shows **overflow**.
  If the operands are regarded as two's complement binary, then the result shows **overflow**.

B

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9. Here is a correctly performed addition:

```
1000
 1100
 1010
 ----
 0110
```

What is true about overflow for this addition?

- **A.** If the operands are regarded as unsigned binary, then the result shows **no overflow**.
  If the operands are regarded as two's complement binary, then the result shows **no overflow**.
- **B.** If the operands are regarded as unsigned binary, then the result shows **overflow**.
  If the operands are regarded as two's complement binary, then the result shows

no overflow.

○ **C.** If the operands are regarded as unsigned binary, then the result shows **no overflow**.
If the operands are regarded as two's complement binary, then the result shows **overflow**.

◉ **D.** If the operands are regarded as unsigned binary, then the result shows **overflow**.
If the operands are regarded as two's complement binary, then the result shows **overflow**.

D

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10. Say that there are two operands represented using the two's complement method:

```
operand A = 0011 1010          operand B = 0110 1011
```

Which of the following uses of the binary addition algorithm shows the problem **A - B**?

○ **A.**

```
0011 1010
0110 1011
---------
```

○ **B.**

```
1100 0110
0110 1011
---------
```

◉ **C.**

```
0011 1010
1001 0101
---------
```

○ **D.**

```
1100 0101
1001 0110
---------
```

C

---

grade quiz

The number you got right: 10 Percent Correct: 100 Letter Grade: A

If you have returned here from another page, or have re-loaded this page, you will need to click again on each of your choices for the grading program to work correctly. You may want to press the SHIFT KEY while clicking to clear the old answers.