FML-CSC160-Binary\_and\_Hex-Assignment

1. Convert the following unsigned binary number to hexadecimal and to decimal: 1011010010

A screenshot of a math test

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1. Convert the following decimal number to binary and to hexadecimal: 1469

A math problem with arrows

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A blue and white grid with numbers and lines

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Arithmetic used to convert the decimal 1469 into a binary number.

All the powers of 2 that went into the decimal are bits that are on, which will be annotated with a 1.

1. What is the largest integer that an unsigned 6-bit number can represent?

What is the largest integer that a signed 6-bit number can represent?

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Answer:

1. What will result from multiplying the binary number 10011100 by 8 decimal?

What will be the result of dividing the 10011100 number by 4 decimal?

What can you conclude about multiplying or dividing a binary number by an even power of 2? (NOTE: Work needs to be done in binary, then think of the similarity in the answers.)

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From multiplying and dividing by even numbers we can see that this results in adding zeros to the right side of the binary or removing zeros from the right side of the binary. This happens because once you reach the maximum place value you must move to the next bit.

Check Answer:

10011100 = 156 / 4 = 39

100111 = 39

39 = 39

Check Answer:

10011100 = 156 \* 8 = 1248

10011100000 = 1248

1248 = 1248



1. Convert -44 to binary 2’s complement form. Express your answer in binary.

Assume a register length of 8 bits.

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Answer