Method 2

- **Method #1 involves several steps that can be prone to error for many of us.**

- **Alternatively, the following rule may be applied to find the signed complement of an original 2's complement number without doing the arithmetic involved in the conversion technique above.**

Short-Cut Rule for 2's Complement Number Conversion:

Copy the digit(s) of the original number from right to left (from the least significant digit) up-to-and-including the first instance of a "1", then complement (flip) the rest of the number.

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`1001`
- **Original 2's Complement number.**

`1`
- **Copy the digit(s) from right to left *up-to-and-including* the fist occurrence of a "1"** - In this case the right-most bit happens to be the fist instance of 1; so we copy (*up-to-and-including*) it; then stop copying.

`0111`
- ***Now, complement* (flip) the rest of the number, i.e., 0 becomes 1 and 1 becomes 0.**
- The resulting number has a sign bit of 0 so simply sum up the rest of the digits and express it as +7.

As if by magic, all that is left for us to do is to evaluate the result; express value's decimal equivalent and remember the sign."

`0111 = +7...`

so we can deduce that the original number represented `−7...` It's that simple!