LAMC Intermediate I & II **October 19, 2014**

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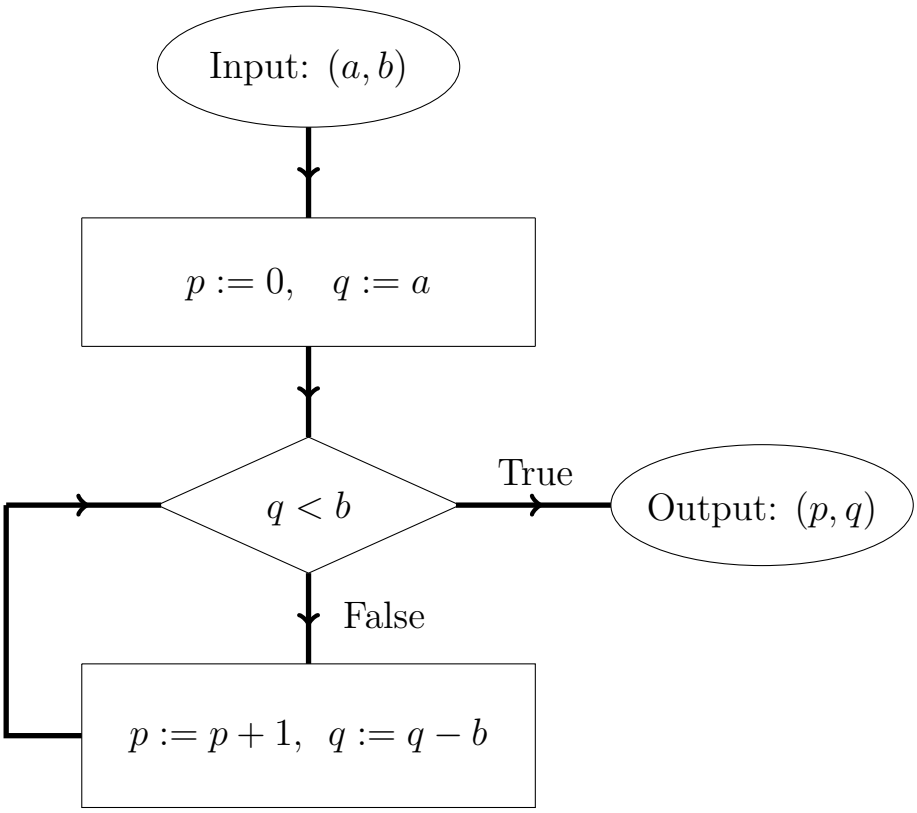
Division Algorithm



Problem 1 *Input:* $(4, 2)$.

Cycle 1

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Cycle 2

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Cycle 3

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Output: $(p, q) =$

What does the output mean?

Problem 2 *Input:* $(2, 3)$.

Cycle 1

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Output: $(p, q) =$

What does the output mean?

Problem 3 *Input:* $(8, 3)$.

Cycle 1

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Cycle 2

$p =$ $q =$

Is the statement $q < b$ *true or false?*

Cycle 3

$p =$ $q =$

Is the statement $q < b$ true or false?

Output: $(p, q) =$

What does the output mean?

Let us switch to the binaries.

Problem 4 *Input:* $(1011, 100)$.

Cycle 1

$p =$ $q =$

Is the statement $q < b$ true or false?

Cycle 2

$p =$ $q =$

Is the statement $q < b$ true or false?

Cycle 3

$p =$ $q =$

Is the statement $q < b$ true or false?

Output: $(p, q) =$

What does the output mean?

Let's check...

$1011_2 =$ *decimal value please*

$100_2 =$ *decimal value please*

Divide the first decimal number by the second (with the remainder) and see if everything works out right.