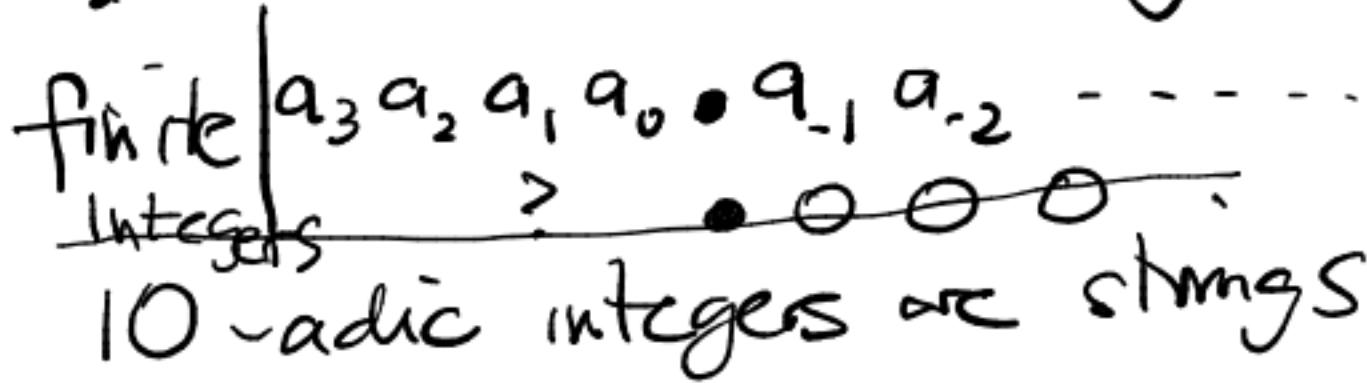


Chapter 7: Completions

Example: the p -adic integers (Section 7.1)

The 10 -adic integers

Decimal numbers are strings



$\dots - a_3 a_2 a_1 a_0 \bullet 000$

Example

\dots	5	4	3	2	1
$+$	4	1	7	9	8

$-$	\dots	9	6	1	1	9
			1	1		

Let $p=2$ and work to base 2.
This was wrong

	$\textcircled{1}$?	?	?	?	$\textcircled{0}$	$\textcircled{1}$	\bullet
	\times							$5 \bullet$
	1	1	1	$\underbrace{00}$	1	$\underbrace{00}$	1	\bullet

5 is a notation for 101

$5 (\dots 01101101) = 1 \times$

001

$\frac{1}{5} = \dots \overline{01101101} \bullet \times$

It should be

$\frac{1}{5} = \dots \overline{110011001101} \bullet$

Question:

When $p = 2$ calculate

(a) $\dots 1111.000 + 1$

(b) $\dots 10101011.000 \times 3$

A 0

B 1

C -1

D 10

E 11