Representing PC-231 integers inside a Java int(eger)

A 32-bit Java int (in two's complement form)

±	…																												

A 12-bit PC-231 integer (in sign-magnitude form)

	…		±	X	X	X	X	X	X	X	X	X	X	X
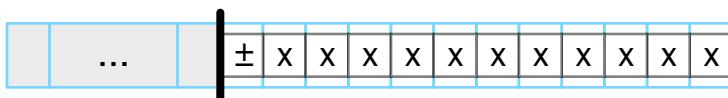
"Sanitizing" a PC-231 *value (not just integers)* rep'ed in a Java integer

3 hex digits

n & 0xfff

	…		±	X	X	X	X	X	X	X	X	X	X	X

&

0	…	0	1	1	1	1	1	1	1	1	1	1	1
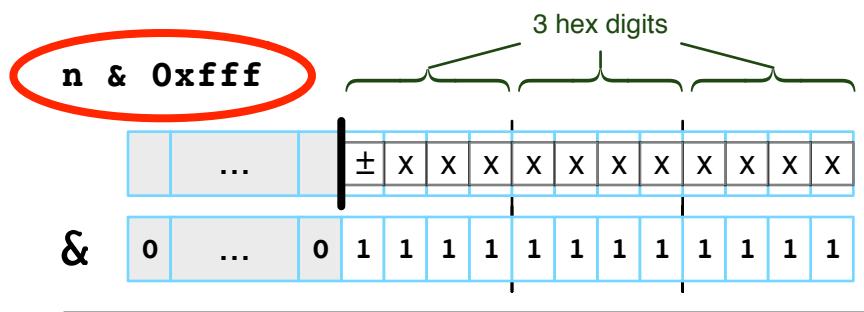
To add two PC-231 integers:

convert to Java integers

❶ ➡

❷

+ ⬇

➡ ❸

convert back to PC-231
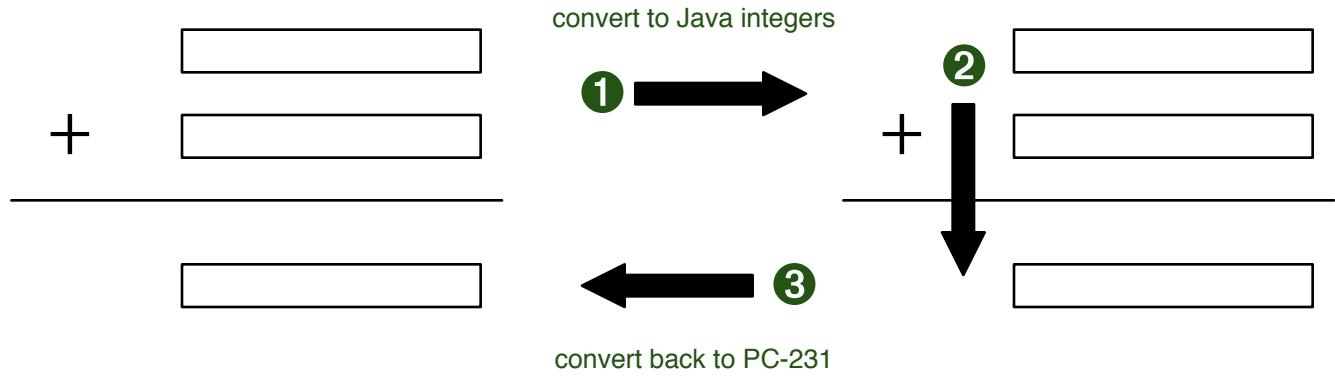
Conversion code for PC-231 to Java and back again

```
int n;      // PC–231 integer
int i;      // Java    integer
    …
i = (n>2048 ? –1 : 1) * (n & 0x7ff);     // PC-231 ==> Java

n = (i<0 ? 2048 : 0)  + (Math.abs(i) & 0x7ff);     // back
```