

# Number Returns

You need: a calculator

## ACTIVITY

1. a. Choose any three digits and enter them into your calculator. Enter them again to form a six-digit number.

For example,  becomes

Now divide by 7 and then divide the number you get by 11.

Finally, divide that result by 13.

What do you notice?

I wonder if  $7 \times 13 \times 11$  has anything to do with it?



Well,  $7 \times 13 = 91$ .  
 $(7 \times 12) + 7$

- b. Try this with some other three-digit numbers. Investigate and explain your findings.

So,  $11 \times 91 = 1\,001$ .  
 $(10 \times 91) + 91$

2. a. Bharat enters a four-digit number on his calculator. He multiplies by 1 001, and

shows on his display.

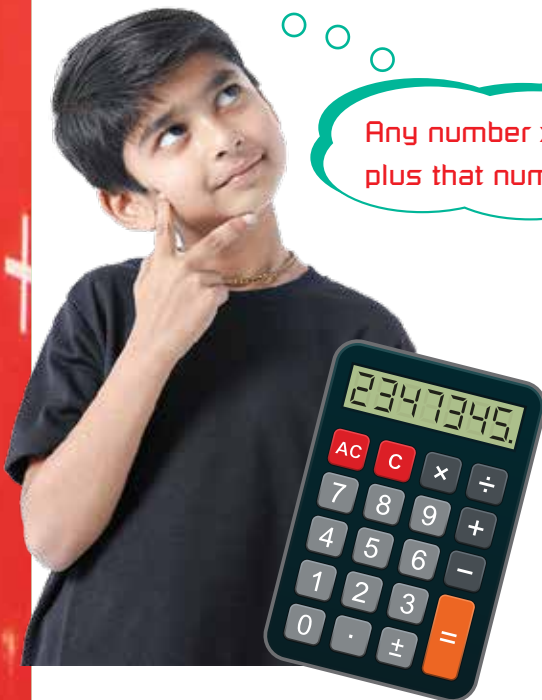
What number did he start with?

- b. Bharat then tries another four-digit number multiplied by 1 001 and gets

What number did he start with?

- c. Experiment with some other four-digit numbers multiplied by 1 001. What patterns can you find?

Any number  $\times 1\,000$  plus that number  $\times 1$



3. What would you multiply a four-digit number by to get a repeat pattern, for example, for  to become ?