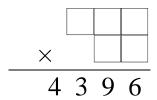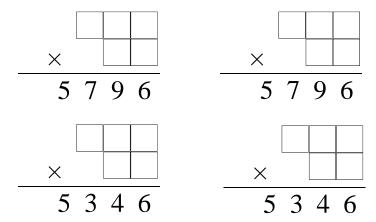Some 4 digit numbers can be written as the product of a 3 digit number and a 2 digit number using each of the digits 1 to 9 once, and only once. The number 4396 can be written as just such a product.

$$\times \quad \boxed{}\boxed{} \quad = 4\ 3\ 9\ 6$$

Can you find the factors?

Maths is full of surprises!
The numbers 5796 and 5346 can each be written as a product like this in two **different** ways.
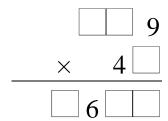
$$\times \qquad = 5\ 7\ 9\ 6 \qquad\qquad \times \qquad = 5\ 7\ 9\ 6$$

$$\times \qquad = 5\ 3\ 4\ 6 \qquad\qquad \times \qquad = 5\ 3\ 4\ 6$$

Can you find these four funny factorisations?

Extension
There are two more funny factorisations to find, using each of the digits 1 to 9 once, and only once.
Can you fill in the blanks below to find one of them?

$$\boxed{}\boxed{}\,9 \quad \times \quad 4\,\boxed{} \quad = \boxed{}\,6\,\boxed{}\boxed{}$$

If you know a bit about computer programming, you may wish to write a program to find the final funny factorisation.