1 multiplication

All from nine and the last from ten

Theorem 1.1 Suppose a, b are positive integers. We will compute ab. Let 10^n be the power of 10 closed to a and b. Let $\bar{a} = a - 10^n$ and $\bar{b} = b - 10^n$ Then we can multiply

	number	complement
	a	$\bar{a}$
$\times$	b	$\bar{b}$
	$10^{2n} + \bar{a} + b$	$\bar{a}\bar{b}$

Proof.

$$ab = (10^n + \bar{a})(10^n + \bar{b}) = 10^{2n} + 10^n(\bar{a} + \bar{b}) + \bar{a}\bar{b}$$ □

Example 1.2 (9×7)

	number	complement
	9	-1
$\times$	7	-3
	6	3