Subtraction

In establishing a set of rules, we want to make them as few and as simple as possible. With subtraction there are three basic rules:

1. Subtractions of 0,1, 2 and subtractions whose answers are 0,1, and 2.
2. The ladder rule or subtractions that require regrouping, and
3. The ten that have to be memorized

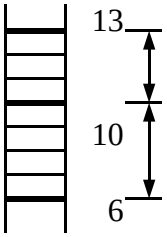
For zero there is no problem. For subtractions of 1 or 2 we respectively count back 1 or 2 similar to the 9 and 8 rules in addition. For subtractions in which the difference is 1 or 2, we can almost recognize that by inspection or simply trying to add 1 or 2. An example of this set of rules is shown below:

9	9	9	9	9	9
-0	–1	–2	-9	–8	–7
9	8	7	0	1	2

On the next group, I use what I call the "ladder rule". This rule is based upon the sums to ten table in addition:

1	2	3	4	5
+9	+8	+7	+6	+5
10	10	10	10	10

For the ladder rule, we see how far we have to go out the ladder to reach the tenth rung. To see how far we have to go get to the rest of the number, we just discard the 1 from the teen. Now add these two numbers and we have the difference. Let us illustrate this as follows:



	13	13
10 – 6=	4	-6
4+3 =		7

We notice that the "ladder rule" is the inverse of the 9 and 8 rule extended. We throw away a 1 instead of concatenating it, and we add 1 instead of subtracting one as in the case of subtracting 9. This was an observation that should have been obvious in that the rules for addition should have their equivalent in subtraction.

The subtractions that have to be memorized are the ones that have a difference between 3 and 6:

9	9	9	9	8	8	8	7	7	6
-3	-4	-5	-6	-3	-4	-5	-3	-4	-3
6	5	4	3	5	4	3	4	3	3