Checking a large routine. by Dr. A. Turing.

How can one check a routine in the sense of making sure that it is right?

In order that the man who checks may not have too difficult a task the programmer should make a number of definite assertions which can be checked individually, and from which the correctness of the whole programme easily follows.

Consider the analogy of checking an addition. If it is given as:

```
        1374
        5906
        6719
        4337
        7768
       ------

       26104
```

one must check the whole at one sitting, because of the carries.

But if the totals for the various columns are given, as below:

```
        1374
        5906
        6719
        4337
        7768
       ------

        3974
        2213
       ------

       26104
```