**Question 2**

We are given

Let

=

The ‘large integer multiplications’ that we need to calculate are:

We can use the fact that

Noticing that the highlighted figures are , we can shrewdly rewrite as

are all each one ‘large integer multiplication’, the co-efficient of 2 is not considered large and so is not counted.

For , only one multiplication of is required, the remaining addition and subtraction is not counted.

And so, via this method, only 5 ‘large multiplications’ are required.