ASSIGNMENT 2 - Solution

Problem 3

First we need to multiply the corresponding elements in the two vectors using the elementwise '.*' operator to obtain the product `x .* y`

```
      4040.04555138045
     -2759471.27670275
       -31.642915312665
      2755462.87401097
   5.57052996742893e-005
```

The four different ways of computing the dot-product have to do with the four different ways of summing these numbers. Also notice that most numbers in `x` and `y` are specified only to 10 digits rather than 15-16 digits as required of double precision numbers. The remaining digits are treated as trailing zeros. In particular `y(3)` has 7 digits and `y(5)` has only 6.

Also notice that the elements in the product have magnitudes that range over 11 orders of magnitudes. In addition, there are a lot of cancellation when these numbers are to be summed up. The resulting sums therefore differ depending on how they are being summed. The four schemes are implemented in Matlab and a script file is provided.