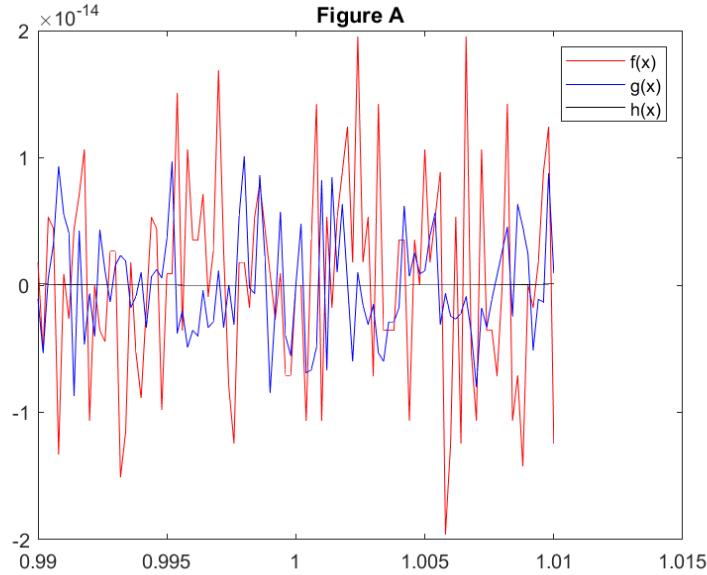


# Theoretical Questions Chapter 4

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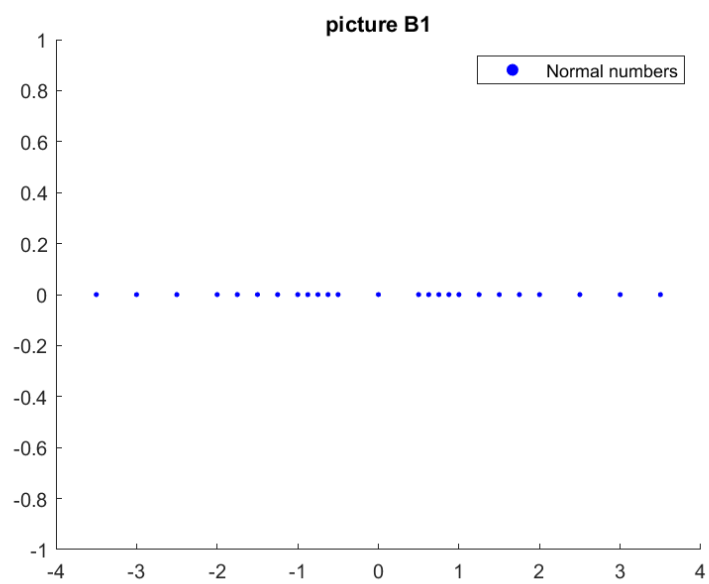
**A** : The following result be



. The  $f(x)$  has the most obviously oscillation, which means that it is unstable. This is because more calculation is doing leads to more round off. The  $g(x)$  has smaller amplitude due to less calculation are doing. It is obvious that  $h(x)$  has the least number of calculation, therefore it is most accurate.

**B** :

- UFL = 0.5 and OFL = 3.5
- Cardinality of  $\mathcal{F} = 25$  Normal number in  $\mathcal{F}$  : -3.5 , -3 , -2.5 , -2 , -1.75 , -1.5 , -1.25 , -1 , -0.875 , -0.75 , -0.625 , -0.5 , 0 , 0.5 , 0.625 , 0.75 , 0.875 , 1 , 1.25 , 1.5 , 1.75 , 2 , 2.5 , 3 , 3.5



- Subnormal number in  $\mathcal{F}$  : -0.1875, -0.125, -0.0625, 0.0625, 0.125, 0.1875

