TASK

- Do this task in a group of max 4 students (could be less than 4 students but cannot more than 4 students; you can choose your own team).
- Do the following on a piece of paper with pen (not pencil), handwritten.
- Provide full steps to gain full marks
- Put your FULL names and ID numbers (of all the members)
- Scan it or screenshot it.
- Save it as "pdf" file
- One group one submission only

| x | 1 | 1.2 | 1.4 | 1.6 | 1.8 |
|---|---|---|---|---|---|
| y | 0.8415 | 1.1184 | 1.3796 | 1.5993 | 1.7529 |

Compute f'(x) and f''(x) at x = 1.4 (4 d.p) using h=0.2

a. First Central Difference Approximation (order $O(h^2)$)

b. First Forward Difference Approximation (order O(h))

c. First Backward Difference Approximation (order O(h))

d. Second Forward Difference Approximation (order $O(h^2)$)

e. Second Backward Difference Approximation (order $O(h^2)$)

(In case of insufficient data then declare it)

f. Compute f'(x) and f''(x) at x = 1.4 (4 d.p) using h=0.4 by First Central Difference Approximation (order $O(h^2)$)

g. Use Richardson's extrapolation for (a) and (f).