In this problem, you will have to produce a version V5 and a version V6 of the 1D Stencil code that we discussed in class. To this end, start with the testV4.cu version provided in HW directory.

**testV5.cu**: Use shared memory to speed up your execution.
**testV6.cu**: Builds on top of V5 and reduces the run time by considering pinned host memory transactions.

What you will have to deliver:
- a) Run a scaling analysis using $N=10^3, 10^4, 10^5, \ldots, 10^8$ elements and generate a png plot that shows GPU-V5 performance against CPU performance. Upload this plot onto the Forum.
- b) The same as above, but shows GPU-V6 performance against CPU performance
- c) Generate a png plot that shows the GPU-V5 performance against GPU-V6 performance.
- d) What change has had more impact? Why is that the case?

**Grading.**
Your submission will be graded as follows:
i) Functionality: 40%
   - Program runs on Euler, producing correct results.

ii) Report: 60%
   - You provide correct results for a) through d) above.