Problem set 6

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Question 1: The limitation of using cooperative groups is the physical over-load, since all the blocks have to be present in the GPU at the same time. The below table shows the run time with respect to increased domain size. It has to be noted that cooperative group fails for the domain size larger than 32 and for the domain size smaller or equal than 4 because of the answer above.

Domain size	time (s)
7	1.665629
8	1.521323
10	1.652728
16	1.550506
20	1.857408
25	1.642036
30	1.958309
32	2.043995

Table 1: Run time with respect to domain size of blocks on 128×128 grid size.