

## Question 7: Heatbath

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The program was written serially in `heatbath-serial.c`. This was timed using the bash `time` built-in 10 times and the average was 10.0 seconds. The value of point (5.5, 5.5) once the system had reached equilibrium was 4.189211.

The program was then parallelised in `heatbath-parallel.c`. This was also timed 10 times for 1, 2, 4, 5 and 10 processors and the averages are in table 1. The same result (4.189211) was achieved.

Table 1: Increasing the number of cores can give over a factor of 2 speed up though using more than two cores gives very little speed up.

Number of Cores	Time (s)
1	7.3
2	3.8
4	3.5
5	3.2
10	4.7