

PS5

Task 4)

CPU

| Iterations | kernel | Time |
|------------|--------|---------|
| 5 | 1 | 0.918s |
| 20 | 1 | 3.688s |
| 20 | 5 | 8.512s |
| 50 | 1 | 9.501s |
| 50 | 5 | 21.372s |

GPU - global memory

| Iterations | kernel | Time | Speed-up (from CPU) |
|------------|--------|--------|-------------------------|
| 5 | 1 | 0.016s | $0.918 / 0.016 = 57.4$ |
| 20 | 1 | 0.053s | $3.688 / 0.053 = 69.5$ |
| 20 | 5 | 0.141s | $8.512 / 0.141 = 60.4$ |
| 50 | 1 | 0.140s | $9.501 / 0.140 = 67.9$ |
| 50 | 5 | 0.308s | $21.372 / 0.308 = 69.4$ |

Task 5)

GPU - shared memory

| Iterations | kernel | Time | Speed-up (from CPU) | Speed-up (from GPU) |
|------------|--------|--------|--------------------------|-----------------------|
| 5 | 1 | 0.011s | $0.918 / 0.011 = 83.5$ | $0.016 / 0.011 = 1.5$ |
| 20 | 1 | 0.032s | $3.688 / 0.032 = 115.3$ | $0.053 / 0.032 = 1.7$ |
| 20 | 5 | 0.074s | $8.512 / 0.074 = 115.0$ | $0.141 / 0.074 = 1.9$ |
| 50 | 1 | 0.071s | $9.501 / 0.071 = 133.8$ | $0.140 / 0.071 = 2$ |
| 50 | 1 | 0.178s | $21.372 / 0.178 = 120.1$ | $0.308 / 0.178 = 1.7$ |

