part0

```
    real    0m0.213s
    user    0m0.213s
    sys     0m0.000s
```

part1

a. The outer loop of the row-oriented algorithm can not be parallelized, since there is a loop dependence.

b.The inner loop of the row-oriented algorithm can be parallelized, since there is no loop dependence.

c. The (second) outer loop of the column-oriented algorithm can not be parallelized, since there is a loop dependence.

d. The inner loop of the column-oriented algorithm can be parallelized, since there is no loop dependence.

```
    f.
    real    0m0.201s
    user    0m0.201s
    sys     0m0.000s
    speedup from part 0: 0.94366
```

part2

(i)

```
    real    0m0.336s
    user    0m0.279s
    sys     0m0.048s
    speed up from serial code: 1.57746
    speed up from OpenMP code: 1.67164
```
(ii)

```
0.4677419 on 1024*1024 matrix
0.1574704 on 2048*2048 matrix
```