Práctica 8

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ÍNDICE

01

HARDWARE USADO

HARDWARE

	Procesador	Caché (L1)	Caché (L2)	Caché (L3)	Hilos	Ram
Enrique	Intel Core i5-8250U	4 x 32 KBytes 4 x 32 KBytes	4 x 256 Kbytes	6 Mbytes	8	8 GB
Juan Diego	Intel Core i5-10400	6 x 32 KBytes 6 x 32 Kbytes	6 x 256 Kbytes	12 Mbytes	12	16 GB
Maquina Virtual	Procesador con 8 Cores	4 x 32 KBytes 4 x 32 KBytes	4 x 256 Kbytes	6 Mbytes	8	6 GB

02

CÓDIGO IMPLEMENTADO

SIN PARALELIZAR

```
void seq_fourier(ElementType temp[MAX_RANGE][MAX_RANGE], int current_range, int n_iter) {
    int row, col, iter;
    for (iter = 0; iter <n_iter; iter++) {
        for (row = 0; row < current_range ; row++) {
            for (col = 1; col < current_range - 1; col++) {
                temp[row][col] = 0.5*(temp[row ][col - 1] + temp[row ][col + 1]);
            }
        }
    }
}
```

OPENMP

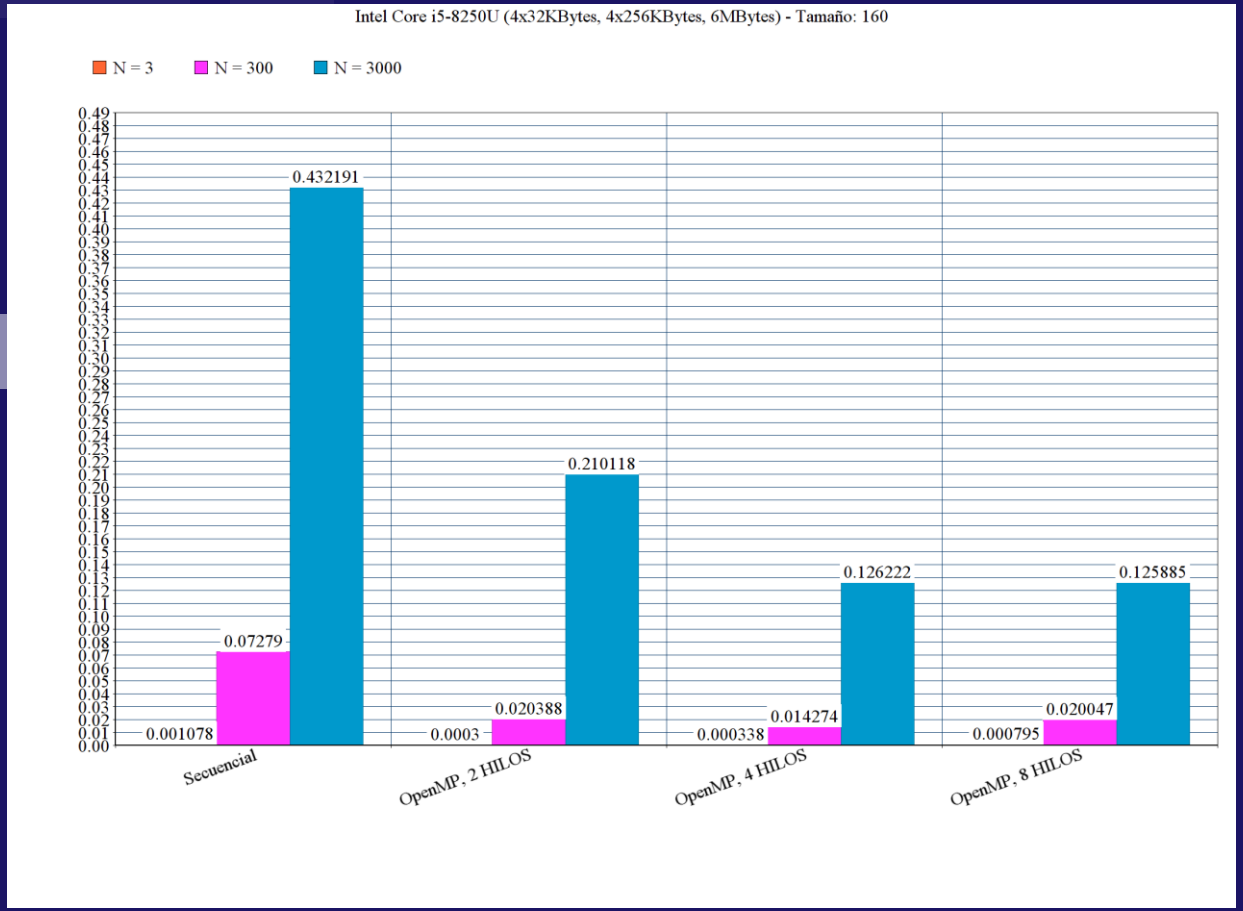
```
void  par_fourier_openmp(ElementType temp[MAX_RANGE][MAX_RANGE], int current_range, int n_iter) {
    int row, col, iter;
    omp_set_num_threads(12);
#pragma omp parallel for default(none) shared(n_iter,current_range, temp) private(iter,row,col)
        for (iter = 0; iter < n_iter; iter++) {
            for (row = 0; row < current_range; row++) {
                for (col = 1; col < current_range - 1; col++) {
                    temp[row][col] = 0.5 * (temp[row][col - 1] + temp[row][col + 1]);
                }
            }
        }
}
```

03

MÉTRICAS

Fórmula para calcular la aceleración:

Tiempo ejecución (lento) / Tiempo ejecución (rápido) * 100

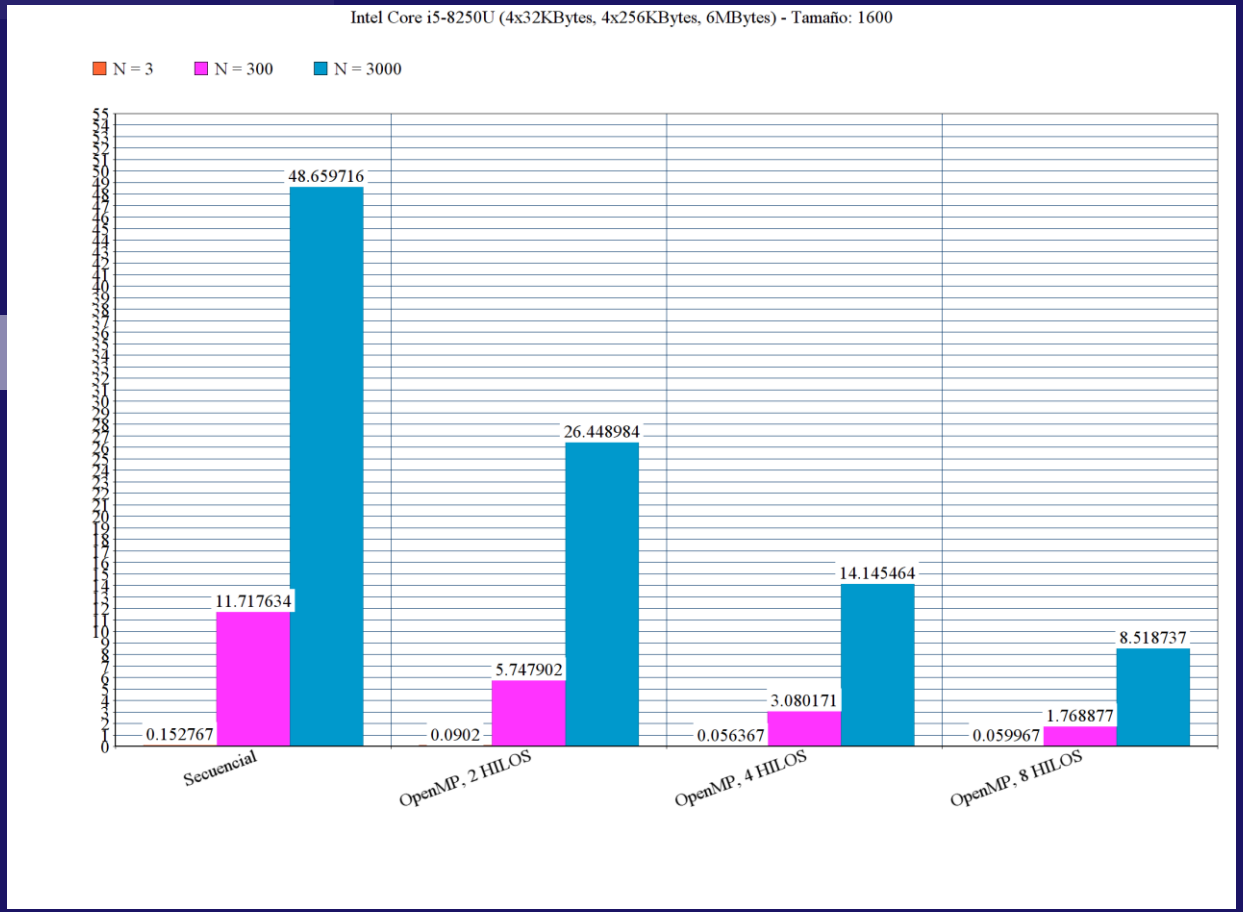


N = 3000 (respecto a secuencial)

2 Hilos = 2,05689 (205,6%)

4 Hilos = 3,42405 (342,4%)

8 Hilos = 3,433220 (343,22%)

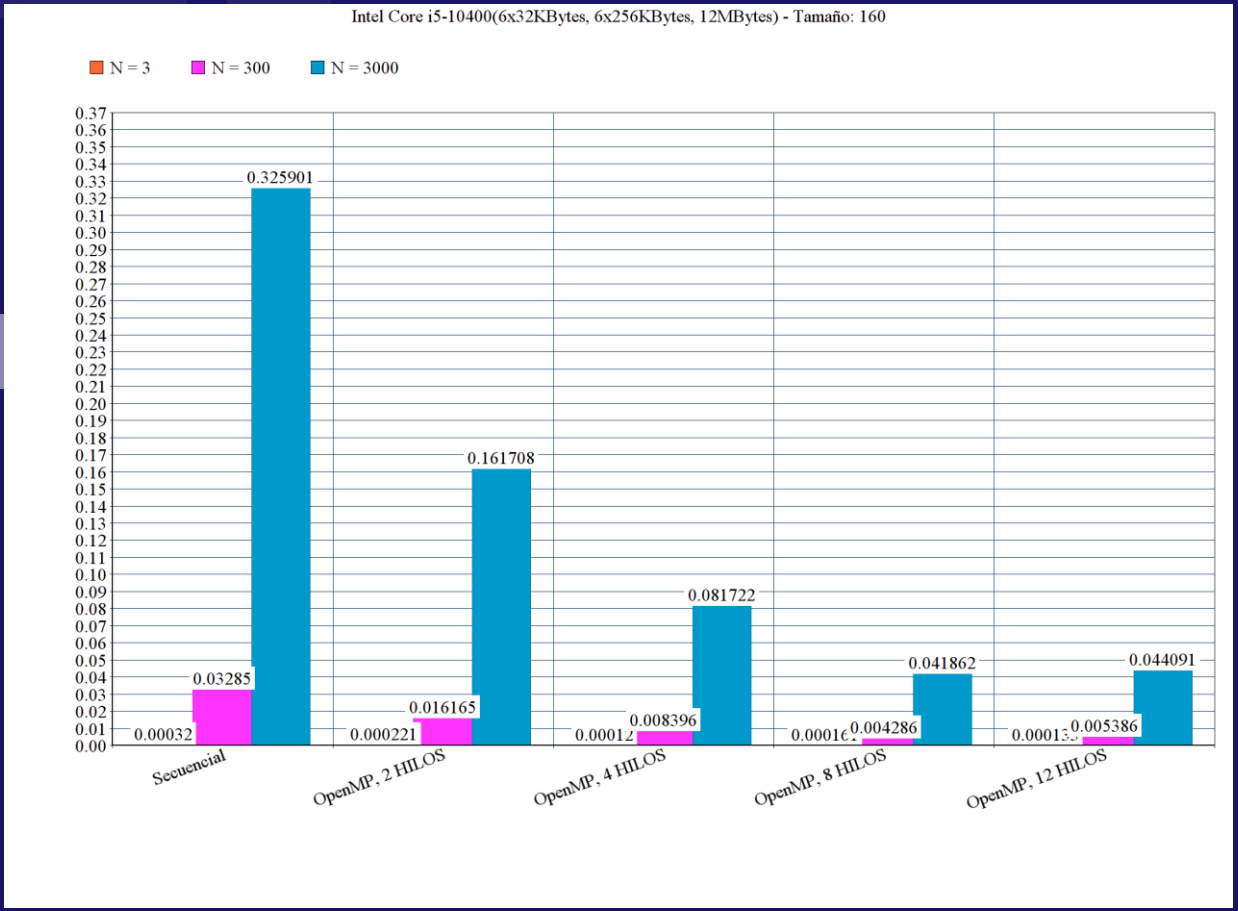


N = 3000 (respecto a secuencial)

2 Hilos = 1,8397 (183,97%)

4 Hilos = 3,4399 (343,99%)

8 Hilos = 5,7120 (571,2%)



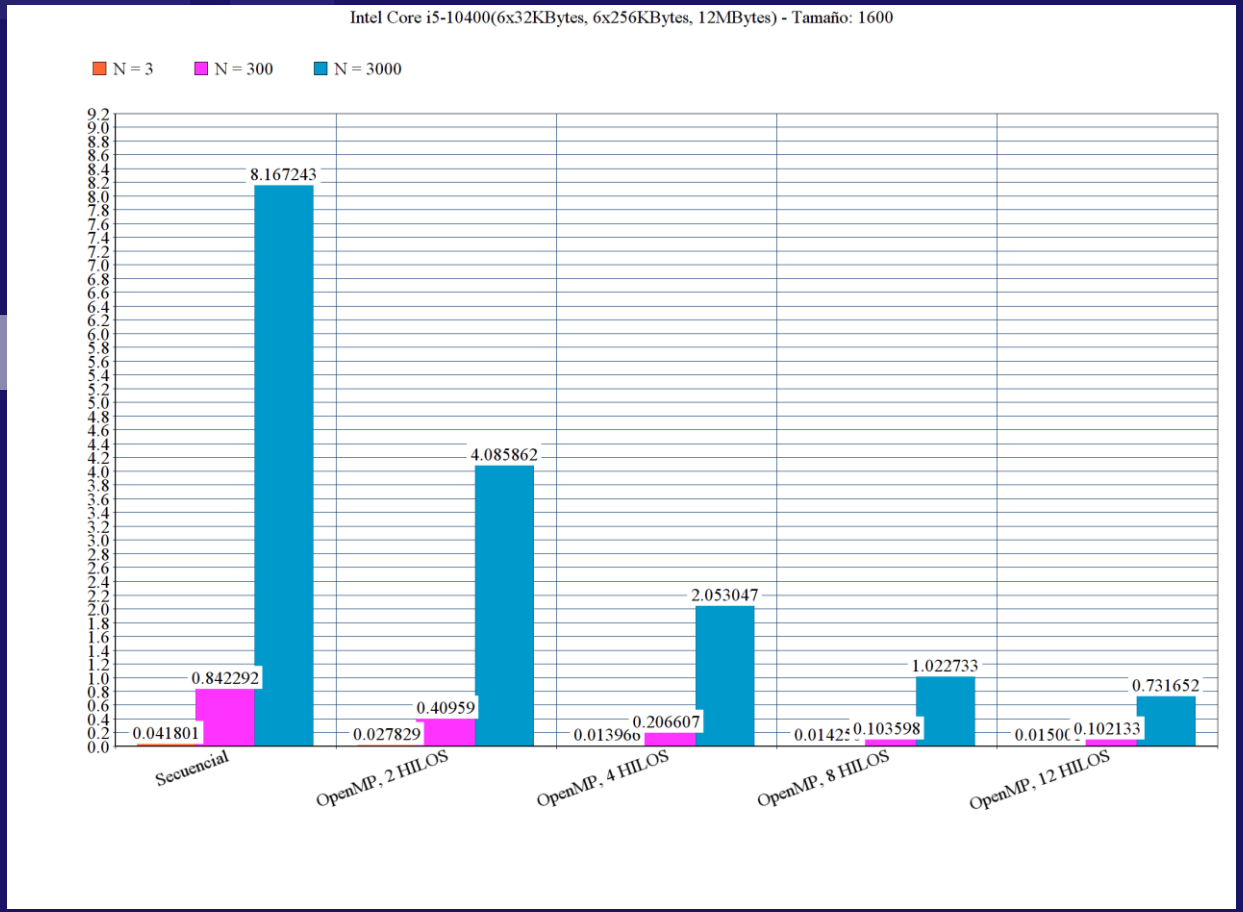
N = 3000 (respecto a secuencial)

2 Hilos = 2,0153 (203,53%)

4 Hilos = 3,9879 (398,79%)

8 Hilos = 7,7851 (778,51%)

12 Hilos = 7,39155 (739,25%)



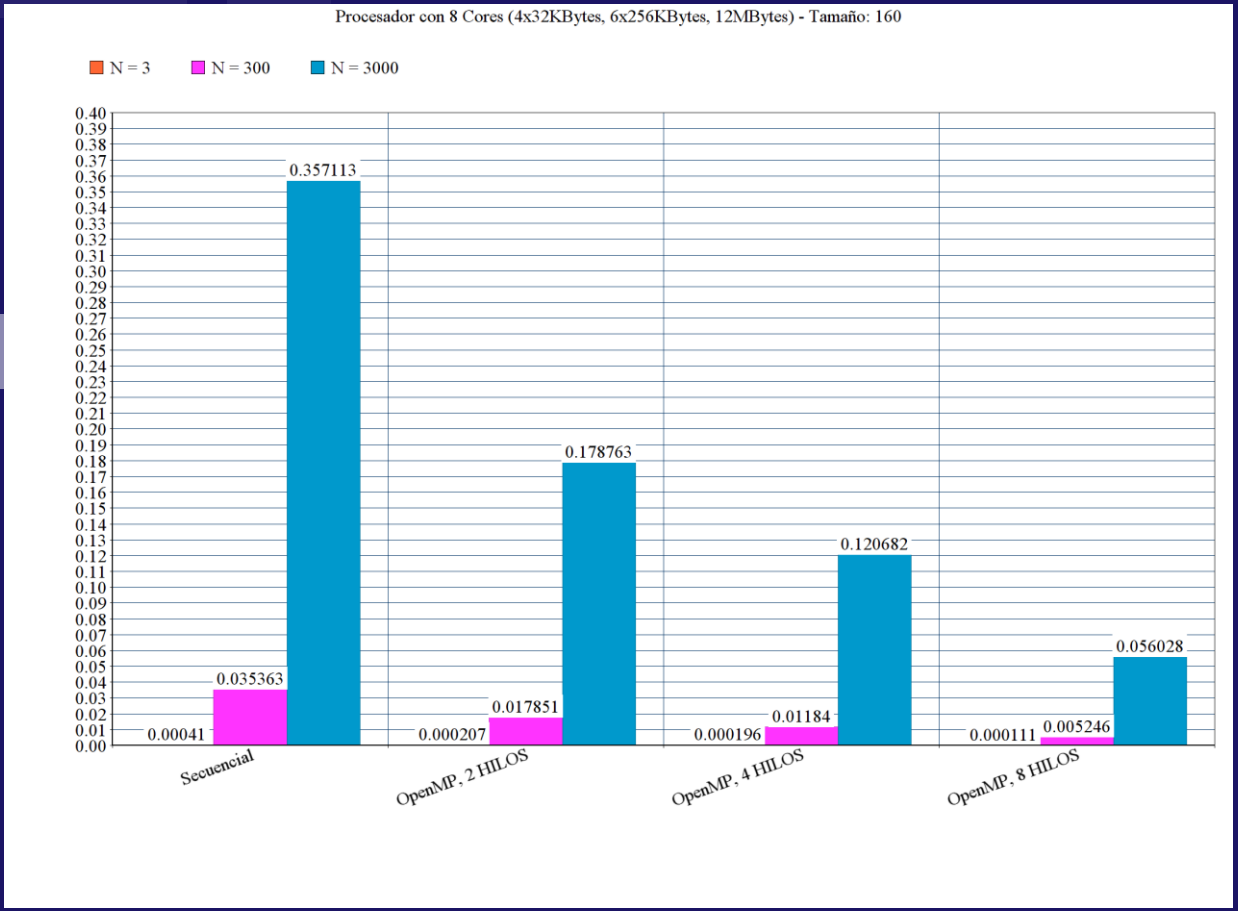
N = 3000 (respecto a secuencial)

2 Hilos = 1,9989 (199,89%)

4 Hilos = 3,9781 (397,81%)

8 Hilos = 7,9857 (798.57%)

12 Hilos = 11,1627 (1116,27%)

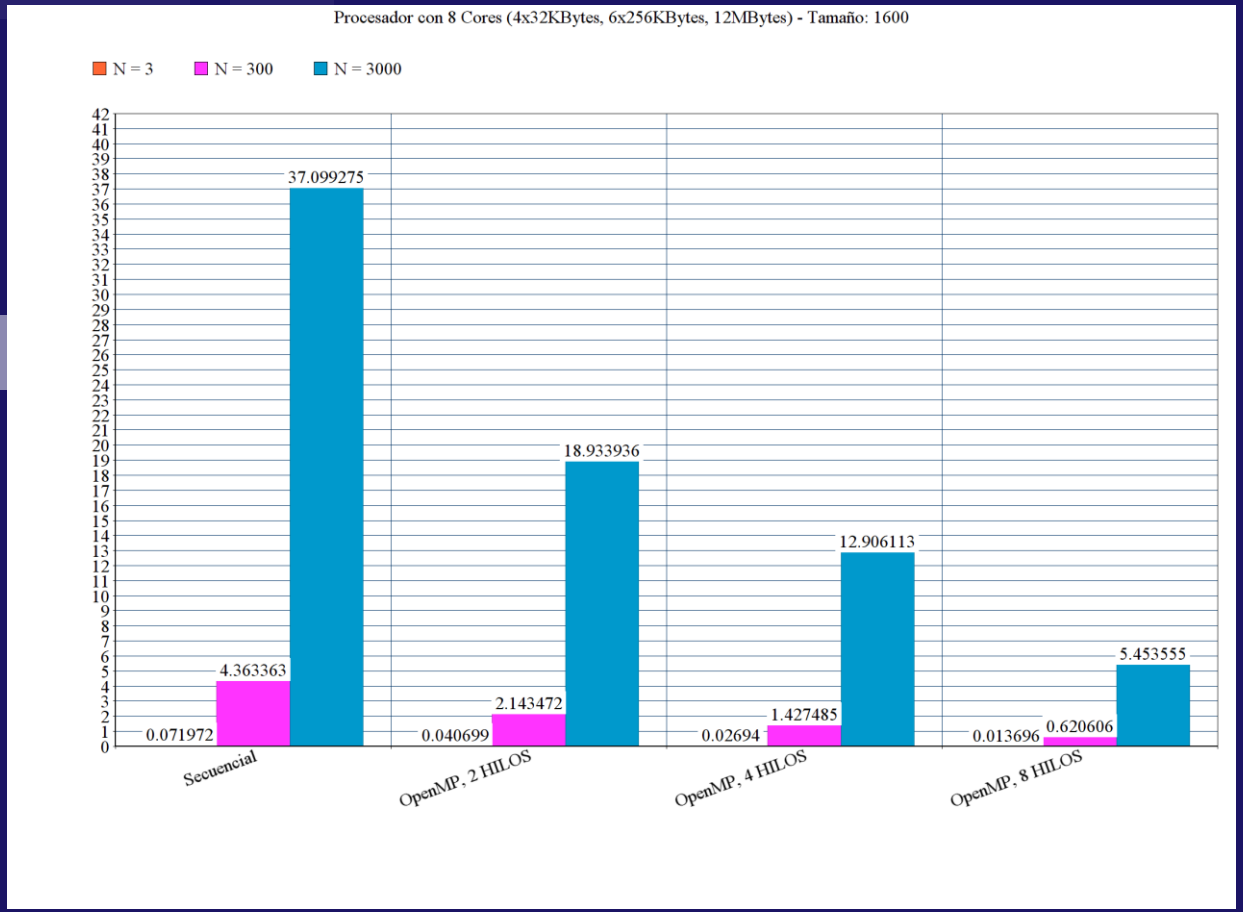


N = 3000 (respecto a secuencial)

2 Hilos = 1,9976 (199,76%)

4 Hilos = 2,9591 (295,91%)

8 Hilos = 6,3738 (637,38%)



N = 3000 (respecto a secuencial)

2 Hilos = 1,9594 (195,94%)

4 Hilos = 2,87455 (287,45%)

8 Hilos = 6,8027 (680,27%)

04

CONCLUSIONES