1. Suppose you have a matrix of doubles represented by an array of pointers to rows, where each row is an array of doubles. Here’s what the structure definition might look like:

```c
typedef struct {
    int num_rows, num_cols;
    double **rows;
} Matrix;
```

Write a function called `sort_matrix_rows` that takes a `Matrix` pointer as a parameter and uses `qsort` to sort the rows in descending order by first element. Note: in order to use `qsort`, you will have to write a comparator function.
2. Suppose your computer has a memory cache with block size 64 B and access time 1 ns, and main memory with access time 17 ns. And suppose you are working with an array of doubles (8 B each). For each of the following scenarios, compute the cache hit rate and the average access time. Assume that the cache is empty at the beginning of each scenario.

- You read the array once and access every element.

- You read the array once and access every *fourth* element.

- You read the array 100 times and access every *eighth* element once, and the array fits in cache.

- You read the array 100 times and access every *eighth* element once, and the array does not fit in cache.

3. Which would you expect to be bigger, an executable that uses statically-linked libraries or one that uses dynamically-linked libraries? Explain why, clearly and concisely.