1. What effects may prefetching have on

    (a) compulsory misses?

    > likely reduces compulsory misses (data that gets used later is already in the cache)

    (b) capacity misses?

    > will not affect capacity misses (the working set is still the same, we just happened to prefetch more of it into the cache)

    (c) conflict misses?

    > may increase conflict misses since it may evict lines that are needed to make room for prefetched lines

2. Assume you have a cache where cache lines are 32 bytes. Also assume that integers take 4 bytes.

    Write a loop in C that performs significantly better when using a *strided prefetcher* than when using a *one block lookahead scheme*.

```c
int *A = malloc(1024 * 1024 * sizeof(int));
int j = 0;
while (j < 1024 * 1024) {
    int sum = 0;
    for (int i = 0; i < 8; i++)
        sum += A[j+i];
    j += 16; // skip two cache lines
}
```