Speed up = T(Sequential Execution)/T(Parallel Execution)
3(a) Best speedup is highlighted in bold

numblocks	blocksize	Speed Up
8912	512	15
8912	1024	12
16384	**256**	**18**
16384	512	15.1
16384	1024	11.5

3(b)
Mapping score difference from KmerWindow of 8 to 16 = 3094
Mapping score difference from KmerWindow of 16 to 32 = 7198
Mapping score difference from KmerWindow of 8 to 32 = 9238

3(c)
Let's use an example below:

Larger Kmer Window Example:

- Sequence: AGCTTAGA
- Kmer Size: 4
- Kmers: AGCT, GCTT, CTTA, TTAG, TAGA
- Assume we calculate mapping scores for each kmer and find that AGCT has the highest score.

Smaller Kmer Window Example:

- Sequence: AGCTTAGA
- Kmer Size: 3
- First Set of Kmers: AGC, GCT, CTT, TTA, TAG
    - Suppose GCT has the highest score in this set.
- Second Set of Kmers: GCT, CTT, TTA, TAG, AGA
    - Now, imagine TTA scores higher than GCT did.

In the smaller kmer window, we have the flexibility to identify a higher scoring kmer (TTA) that wasn't considered as a separate unit in the larger kmer window, where AGCT

was the highest. The smaller window allows us to focus more closely on different parts of the sequence, potentially finding higher scores because we can assess more, and possibly different, kmers independently.