Analysis Report:

1. Whether tasks are getting harder as dimension increases?
2. The more threads we use, the better performance we have?

For the first question, the answer is yes as we can observe from the guess count chart.

The scale of guess count charts increases significantly as the dimension increase.

For the second question, generally it is the case as the more threads we use the, the more guess we can make, if the total execution time is the same. The inconsistency above comes from 1. the total execution time are different, 2. time spending on wait lock is different or other overhead such as context switch. The second factor would cause the effect that more threads does not guarantee better performance. Also, we need to consider the “luck” factor as we use random guessing method. This bias can be mitigated by running the program many times and retrieve the average result.