

# DannyLangfordHW05

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## 1 Question 3.2

I ran the decryption method locally from 20 bits to 24 bits on one thread each time. Once I hit 24 bits it took roughly 100 seconds to run. I wanted to forecast how long it would take to run 31 bits locally on one thread. I put the data I gathered into Minitab and constructed a time series plot of the data. From there, since it was easy to tell that the data showed exponential growth from 20 to 24 bits, I conducted an exponential forecast of the data up to 31 bits producing the following graph:

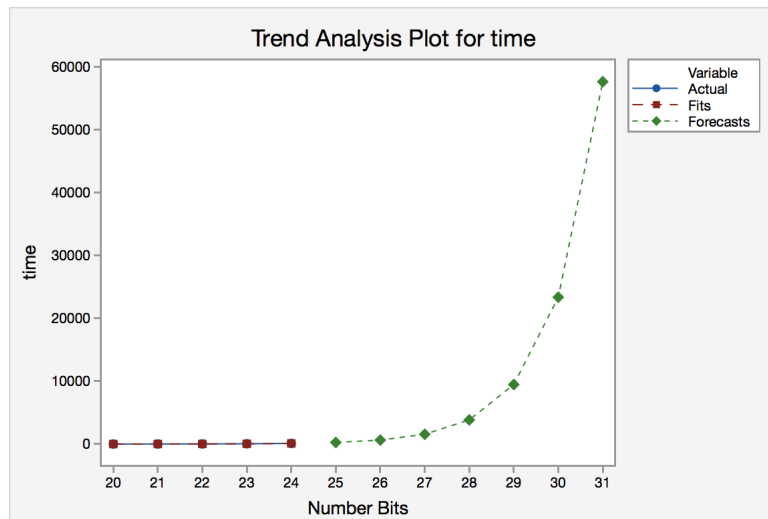


Figure 1: 31 Bits Forecast

We can see at 31 bits it took roughly 57,000 seconds which is the equivalent of 16 hours. I believe this is a good estimate of the time it takes to run the decryption process because adding more bits is an exponentially time consuming process.