1158-62-334   **Mohammad Rafiqul Islam*** (`mislam02@student.ysu.edu`), 830 Ohio Avenue, Apt 7, Youngstown, OH 44504, and **Nguyet Nguyen** (`ntnguyen01@ysu.edu`), 522 Lincoln Building, Department of Mathematics and Statistics, Youngstown, OH 44505. *Comparison of ARIMA, Artificial Neural Network (ANN), and Geometric Brownian Motion (GBM) models for stock price prediction.* Preliminary report.

Time series analysis of daily basis stock data and building predictive models are complicated because of the nonstationarity of the data. However, alternative methods could be used to avoid such complexity and to have a similar or better approximation. This paper presents a comparative study for stock price prediction using three different methods, namely autoregressive integrated moving average (ARIMA), artificial neural network (ANN), and stochastic process-geometric Brownian motion (GBM). Each of the methods has been used to build predictive models using historical stock data collected from yahoo finance. Empirical results show that the neural network method gives a better approximation. (Received March 03, 2020)