Which of the below best explains the role of models in time series analysis (and statistics more broadly)? Pick one, and explain your choice.

A. A statistical inference requires a statistical model. Investigating a hypothesis via a p-value requires a model to obtain the distribution of the p-value. Investigation of Bayesian posterior probabilities requires a model.

B. Parametric statistical tests require a model. However, where possible, we should use nonparametric methods (e.g., rank tests, or cross-validation) that do not require a model and so are more robust.

C. Modeling is of intrinsic scientific value, as a way of understanding the data-generating mechanism. We do not have to have specific statistical tests in mind when developing a model.