A new approach to explain the apparent randomness of a deterministic system is from the perspective of time series analysis. The iterates of an interval map $f$ are the random variables on the interval with respect to a measure preserved by $f$. It is shown here that such time series are always stationary. If $f$ is piecewise linear and preserves Lebesgue measure, the induced time series is a first order autoregression. In particular, when $f$ is the k-adic shift or the asymmetric tent, the time series is a first order autoregression. If $f$ has certain symmetries, e.g. if $f$ is the logistic function or the symmetric tent, the induced time series is white noise. (Received September 28, 2005)