

Stationarity

Тест, 7 вопроса

1

Баллы

1.

For a weakly stationary process, which of the following are true?

☐

The mean function is constant.

☐

The variance function is constant.

☐

The autocovariance is constant.

1

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2.

A random walk is an example of a weakly stationary process.

☐

Yes.

☒

No.

1

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3.

A moving average is an example of a weakly stationary process.

☒

Yes.

☐

No.

1

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4.

Suppose you have the MA(2) process:

Stationarity

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$$X_t = Z_t + .5 Z_{t-1} + .5 Z_{t-2}, \quad \sigma^2 = 1$$

How many terms in the ACF are nonzero?

- ☐ There are no nonzero terms.
- ☐ Exactly 2.
- ☒ Exactly 3.
- ☐ An infinite number.

1

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5.

Let's think about our MA2 process from the last question.

$$X_t = Z_t + .5 Z_{t-1} + .5 Z_{t-2}, \quad \sigma^2 = 1$$

What is the autocovariance at lag zero? That is, calculate $\gamma(0)$.

1.5

1

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6. Stationarity

Again, consider the MA2 example.

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$$X_t = Z_t + .5 Z_{t-1} + .5 Z_{t-2}, \quad \sigma^2 = 1$$

calculate the autocorrelation function at lag 2.

0.3333333

1

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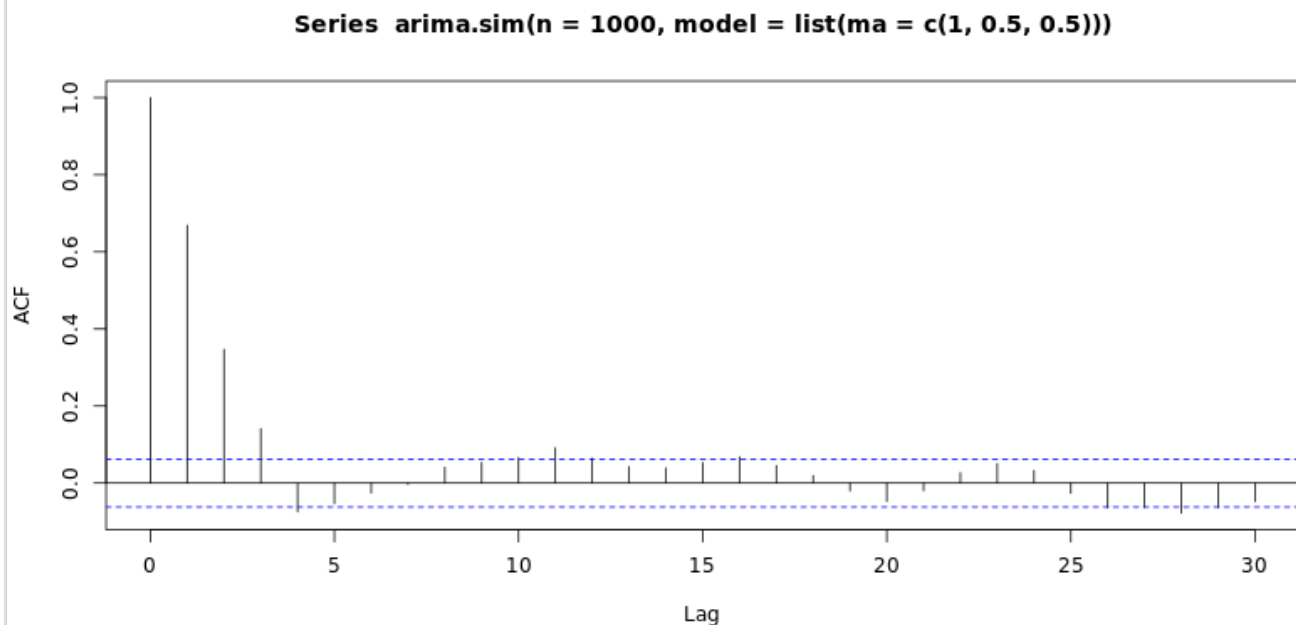
7.

Run the following code to simulate our MA(2) process as shown above. Be sure to replace XX's with the appropriate coefficients.

```
1 set.seed=1
2 (acf(arima.sim(n=1000, model=list(ma=c(1,0.5, 0.5)))))
```

Выполнить

Сбросить



From your graph or the function output, estimate $\rho(1)$.



1



0.531

 0.338

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- ☐ Я понимаю, что отправка работы, выполненной не мной, может привести к тому, что курс не будет засчитан, а аккаунт Coursera заблокирован.

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