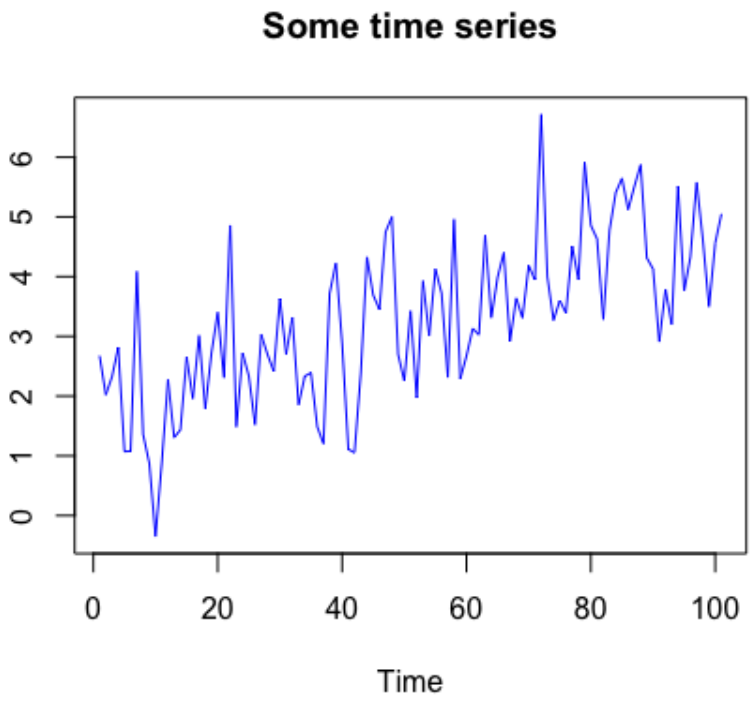
Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

1
Баллы

1.
Time plot of a time series is shown. What can be said about the stationarity of this time series?



- It is a staionary time series.
- It is a non-stationary time series since there is a fluctuation.
- It is stationary since there is a trend.
- It is a non-stationary time series since there is a trend.

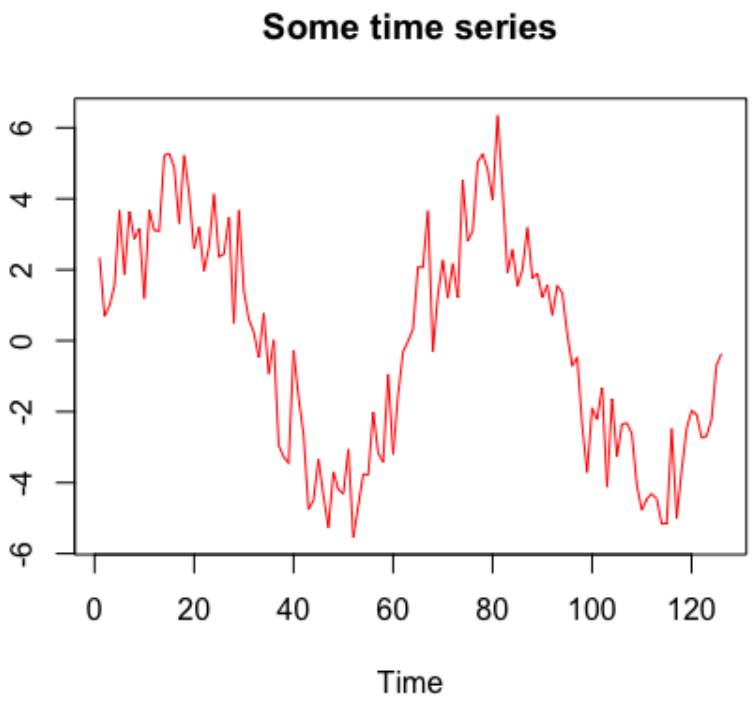
1
Баллы

Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

2.

Time plot of a time series is shown. Select one or more that can be said about the stationarity of this time series.



- [ ] It is stationary.
- [ ] It is non-stationary.
- [ ] It is non-stationary since there is a trend.

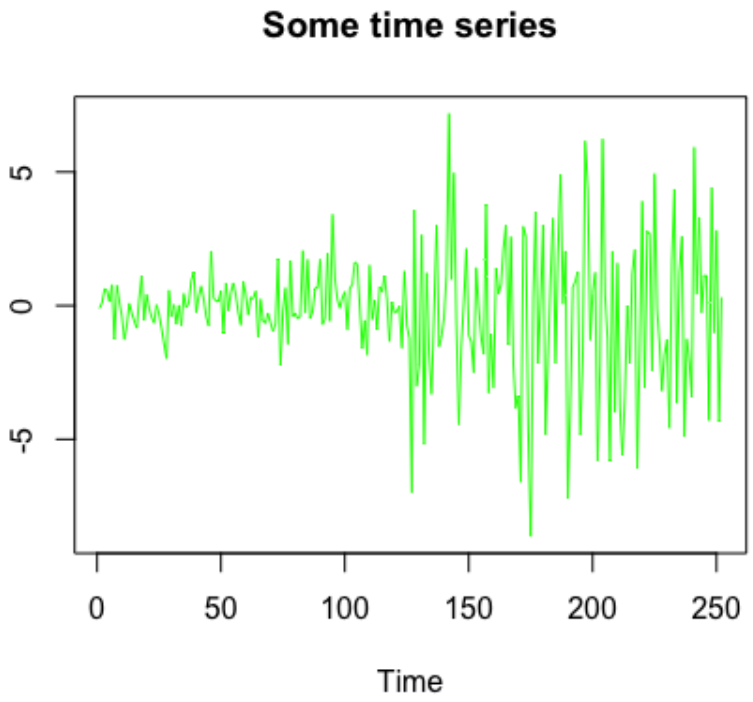
1 Баллы

3.

Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

Time plot of a time series is shown. Select one or more that can be said about the stationarity of this time series.



- [ ] It is a stationary time series since there is no trend.
- [ ] It is a stationary time series since there is no seasonality.
- [x] It is a non-stationary time series.
- [x] It maybe combination of two stationary time series.

1
Баллы

4.

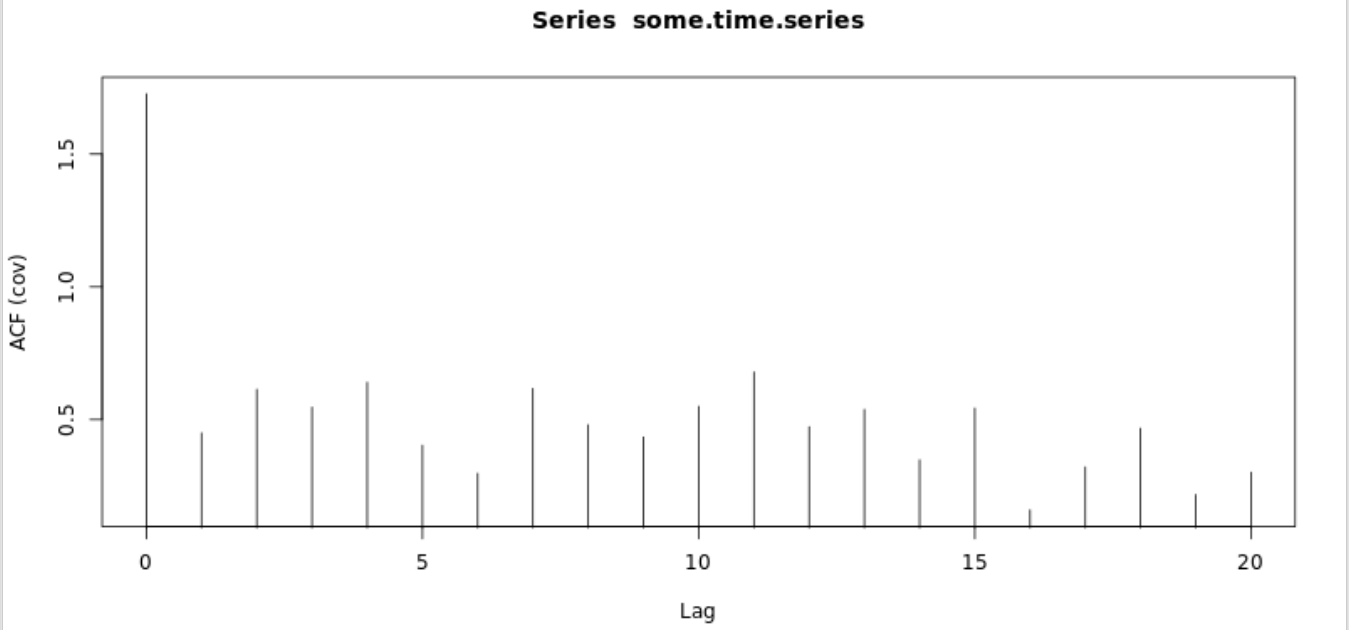
Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

```
# Simulating a non-stationary time series

# Set seed so thet we generate the same dataset
set.seed(2017)
# time variable
t=seq(0,1,1/100)
# generate a time series
some.time.series=2+3*t+ rnorm(length(t))

# obtain acv for this time series below
c <- acf(some.time.series, type = "covariance")

print(c$acf[5])

```

Выполнить

Сбросить



What is sample autocovariance coefficient c_5?

- 5
- 0.640
- 0.403
- 1.717

1 Баллы

5.

What is the sample autocorrelation coefficient r_0 for any time series?

- Depends on the time series.
-

It is 1.

Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

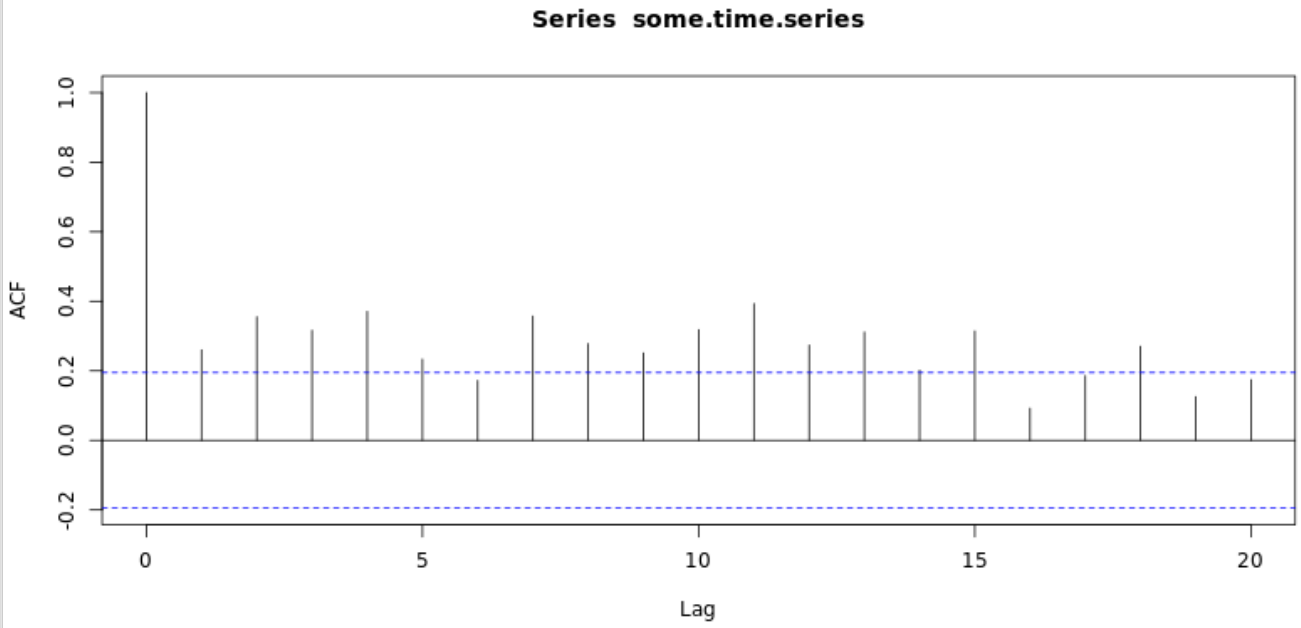
1 Баллы

6.

```
# Simulating a non-stationary time series

# Set seed so thet we generate the same dataset
set.seed(2017)
# time variable
t=seq(0,1,1/100)
# generate a time series
some.time.series=2+3*t+ rnorm(length(t))
# obtain acf of the time series below
r = acf(some.time.series)
r[5]
```

Выполнить

Сбросить



What is r_5?

- 0.233
- Cannot be calculated since it is non-stationary time series.
- 1

1 Баллы

7.

Which one or more of the following can be said about the random walk?

Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопросов

- [x] Random walk model relates current value of the time series to the previous value by adding some random deviation to the previous value.
- [ ] Random walk is a stationary stochastic process.
- [x] Random walk is the accumulation of random deviations from previous steps until the current time.

---

1 Баллы

8.

How one can obtain a stationary stochastic process from the random walk?

- (•) Using the difference operator.
- ( ) One cannot.

---

1 Баллы

9.

Which one or more of the following can be said about moving average processes?

- [x] The current value of the process now is a linear combination of the noises from current and past time steps.
- [ ] Autocorrelation function of the process decreasing slowly without hitting zero.
- [x] Autocorrelation function of the process cuts off and becomes zero at the order of the process.

---

1 Баллы

10.

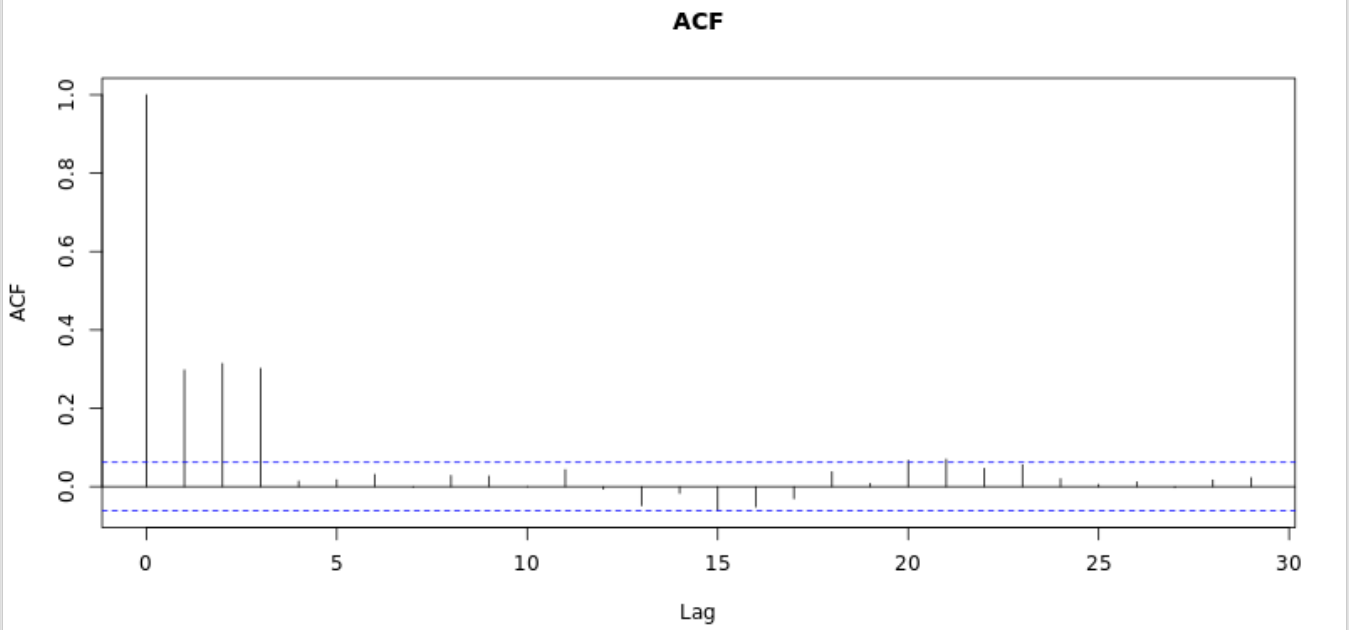
Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса

```r
# Simulating MA(4) process.
# X_t= Z_t+0.2 Z_(t-1)+0.3 Z_(t-2)+0.4 Z_(t-3)

set.seed(2^10)
z=NULL
z=rnorm(1000)
data=NULL
for(i in 4:1000){
  data[i-3]=z[i]+0.2*z[i-1]+0.3*z[i-2]+0.4*z[i-3]
  }
data=ts(data)

# find acf below

r = acf(data, main = "ACF")
r[5]
```

Выполнить

Сбросить



What is the autocorrelation coefficient at lag 4?

- [x] **0**
- [ ] 0.022

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

Узнайте больше о Кодексе чести Coursera

Введите Ф. И. О. (как в удостоверении личн

Submit Quiz

Time plots, Stationarity, ACV, ACF, Random Walk and MA processes

Тест, 10 вопроса