

# Quiz 4

Number of participants: 81

1

By checking "I confirm", I do confirm that I am present in the Lecture Zoom meeting at the moment and am doing this quiz individually and without sharing my answers with anyone.

✓ I confirm



100%

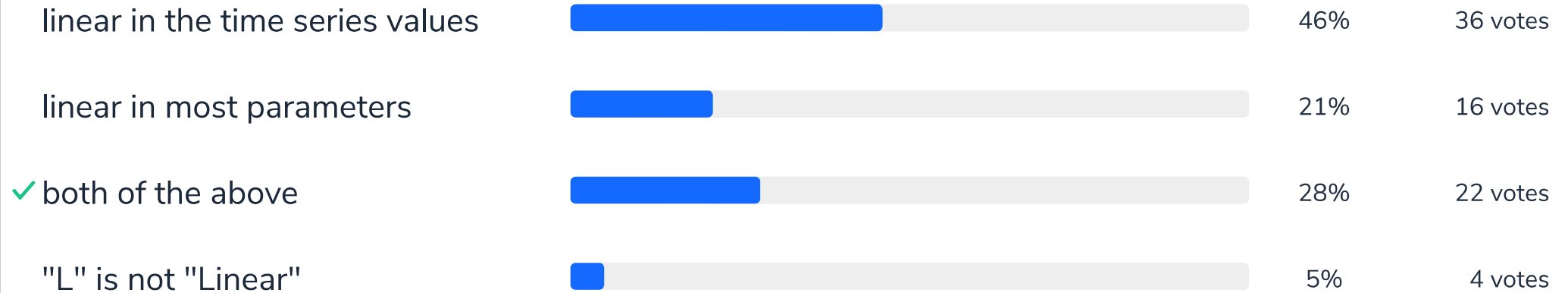
80 votes

## Slide

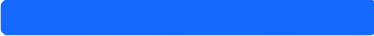
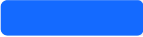
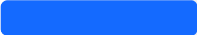

### Quick Instructions

- **Remain muted** in Zoom during the whole quiz time
- If you have a **question**, type it in the Zoom chat
- The time is limited, please **follow the timer** displayed in Zoom
- Each question of the quiz has **exactly one correct answer**
- You must **press the "Submit" button** after answering every question
- **$GRADE = \min(10, \text{number of correct answers})$**

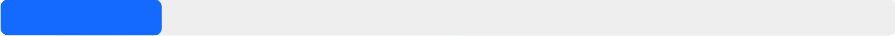

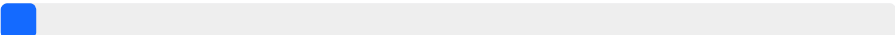
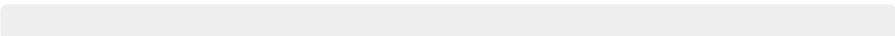
In "ULM", by "Linear" we mean that the models are ...



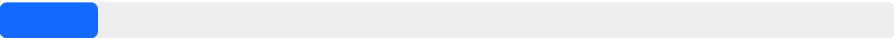
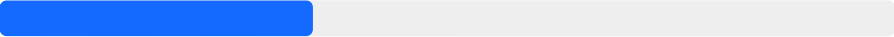
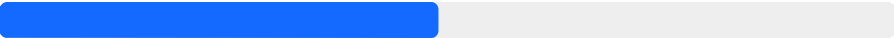
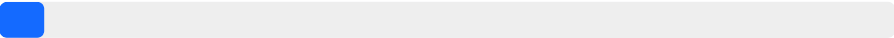
## "ANY stationary TS can be represented as an infinite order MA process"

✓ that's TRUE, it's Wold's theorem		42%	32 votes
that's TRUE, it's what Box & Jenkins said		16%	12 votes
NO, stationarity is not enough		22%	17 votes
NO, infinite order processes don't exist		21%	16 votes

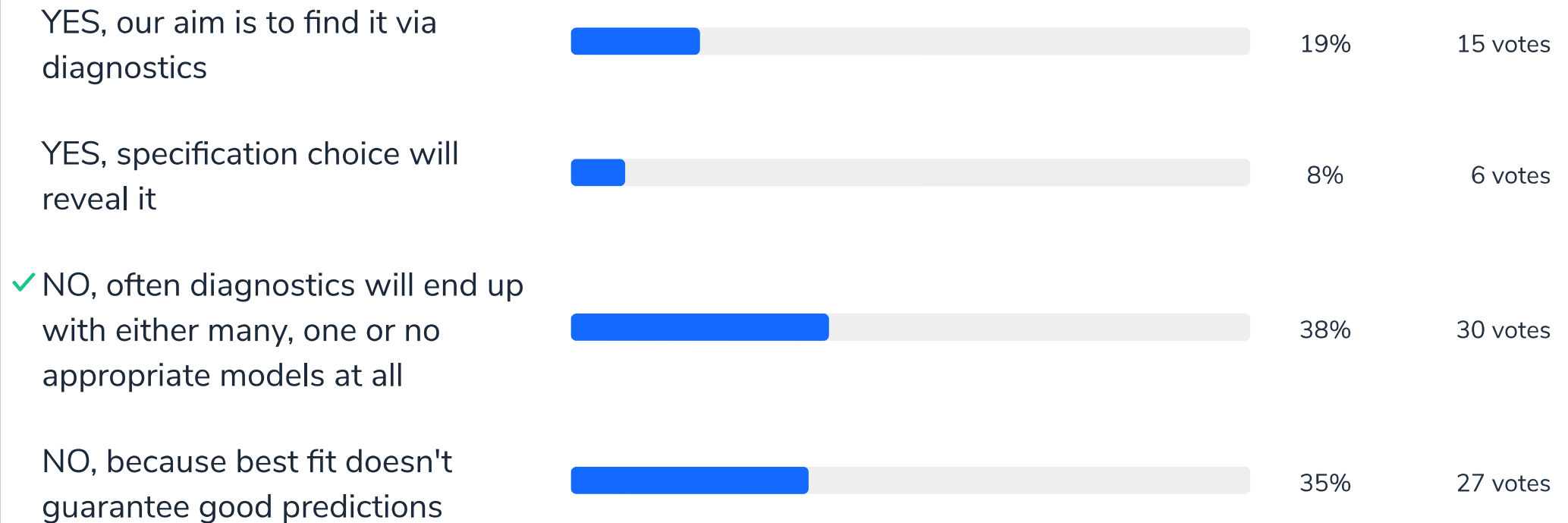
"Data from stationary TS usually can be modeled as some not very complicated ARMA"

that's TRUE, it's Wold's theorem		18%	14 votes
✓ usually, that's TRUE, according to Box & Jenkins		79%	63 votes
NO, stationarity is not enough		4%	3 votes
NO, because non-linearity in data is too strong		0%	0 votes

## To choose ARMA specification for particular data means ...

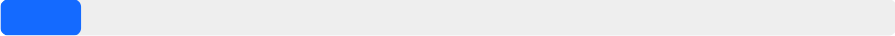
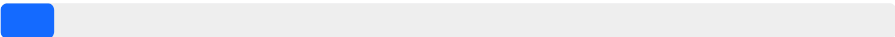
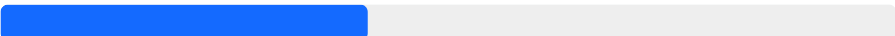
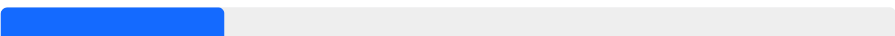
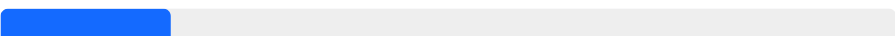
Partition the data into fitting and validation samples		11%	9 votes
Analyze ACF and guess the true orders of ARMA(p,q)		35%	28 votes
✓ Pick appropriate range for the orders according to ACF and common sense		49%	39 votes
Agree that the process is linear and we have to use ARMA		5%	4 votes

"For some stationary data sample, there's always ONE model that fits the data the best"

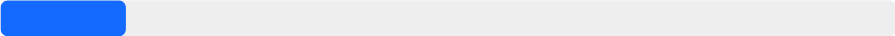
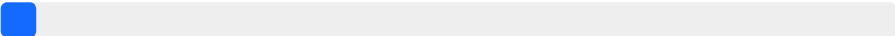

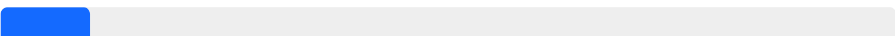




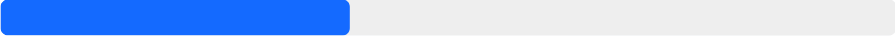

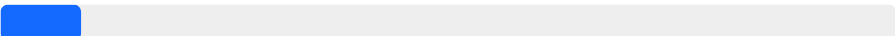
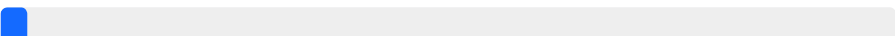
Some TS process is i.i.d. with zero mean and unit variance. Then it is...

Strictly stationary		9%	7 votes
Weakly stationary		6%	5 votes
Strict white noise		41%	33 votes
Weak white noise		25%	20 votes
✓ All of the above		19%	15 votes

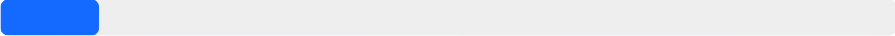

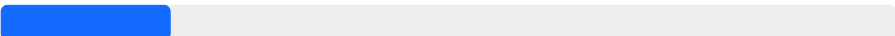
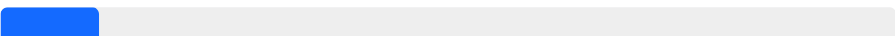
The process  $X(t) = X(t-1) + e(t)$ , where  $e(t)$  is WWN, ...

is weakly stationary		14%	11 votes
is strictly stationary		4%	3 votes
✓ has unit root		71%	55 votes
none of the above		10%	8 votes

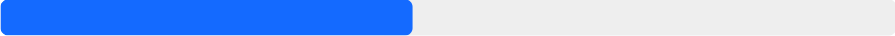
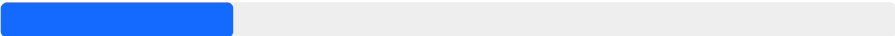
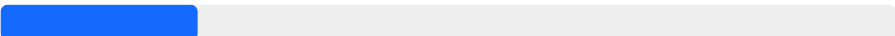
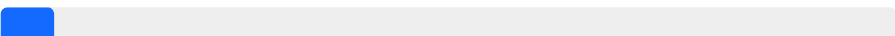
The process  $X(t) = e(t) + A \cdot e(t-1)$ , where  $e(t)$  is WWN,  
is stationary ...

✓ for all A		39%	30 votes
for $ A  < 1$		49%	37 votes
for $ A  > 1$		9%	7 votes
for $A > 0$		3%	2 votes

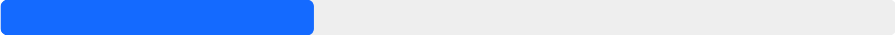
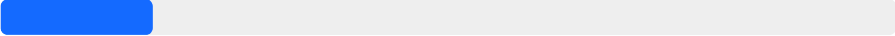
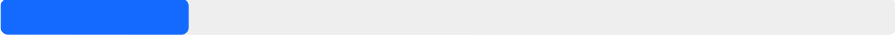
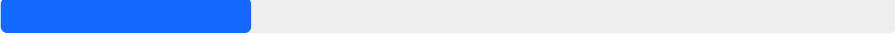
The process  $X(t) = e(t) + A \cdot X(t-1)$ , where  $e(t)$  is WWN,  
is stationary ...

for all A		11%	8 votes
✓ for $ A  < 1$		59%	44 votes
for $ A  > 1$		19%	14 votes
for $A > 0$		11%	8 votes

What is autocovariance of order 3 for  $X(t)=e(t)+0.5e(t-1)$ , where  $e(t)$  is  $WWN(1)$ ?

✓ 0		46%	33 votes
0.5		26%	19 votes
0.125		22%	16 votes
-1		6%	4 votes

For AR(p) processes, the autocovariance of order  $j > p$  ...

is zero		35%	25 votes
is not zero		17%	12 votes
doesn't exist		21%	15 votes
✓ not enough data		28%	20 votes