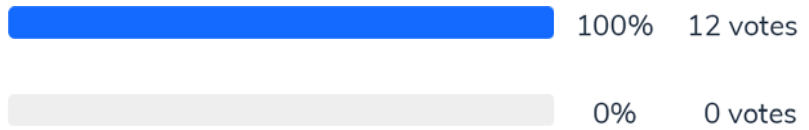


DOS2020_Vibrations_sources

Number of participants: 12

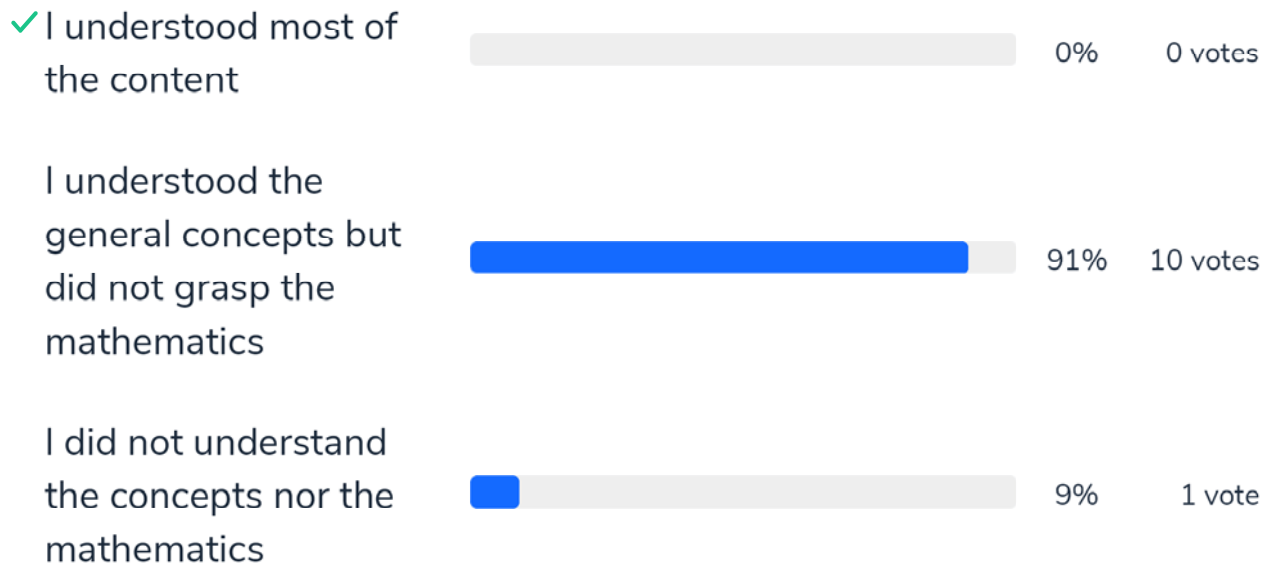
1

I have watched the video on Dynamics excitations / Vibration sources and response spectra before coming to the class



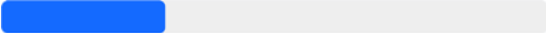

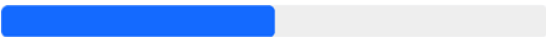
2

After watching the video I think that



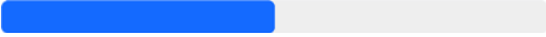
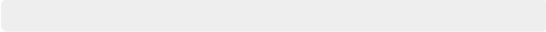
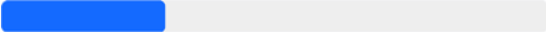

3

The discrete Fourier transform applies
to

any type of signal		30%	3 votes
only random signals		20%	2 votes
✓ only periodic signals		50%	5 votes

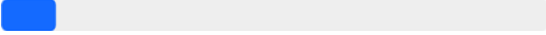
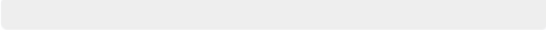

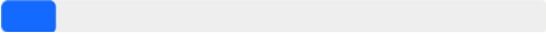
4

The continuous Fourier transform applies to

✓ any type of signal		50%	5 votes
periodic signals only		0%	0 votes
harmonic signals only		30%	3 votes
it depends on the type of excitation of the system		20%	2 votes

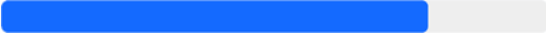
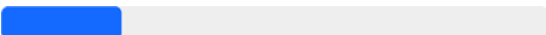
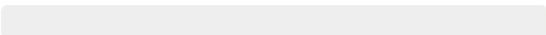
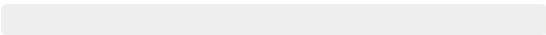
5

The continuous Fourier transform of a rectangle (pulse) is

a cosine function		10%	1 vote
a sine function		0%	0 votes
✓ a sinc function		80%	8 votes
a complex function which cannot be computed analytically		10%	1 vote

6

Convolution in the time domain corresponds to

✓ multiplication in the frequency domain		78%	7 votes
convolution in the frequency domain		22%	2 votes
deconvolution in the frequency domain		0%	0 votes
division in the frequency domain		0%	0 votes

7

Aliasing happens when

The sampling frequency is too high with respect to the frequency content of the signal



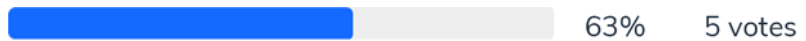
✓ The sampling frequency is too low with respect to the frequency content of the signal



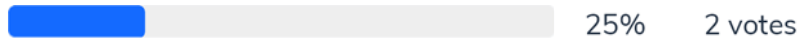
8

When using Fast Fourier Transform on sampled signals, you can increase the frequency resolution by

decreasing the time step of the sampling signal, keeping the total measurement time constant



increasing the time step of the sampling signal, keeping the total measurement time constant



✓ increasing the measurement time, whatever the time step of the sampling signal



9

When using FFT, the time step of the sample signal has an influence on

The frequency resolution of the FFT



75%

6 votes

✓ The maximum frequency of the FFT



25%

2 votes

It has no influence on the FFT



0%

0 votes

10

Suppose the sampling frequency of the accelerometer on your smartphone is 200 Hz. Up to what frequency can you measure acceleration signals ?

