

DOS : 1DOF

Number of participants: 15



1. When describing a harmonic motion, the complex amplitude vector contains

12 correct answers
out of 12 respondents

the phase information only



0 votes

the amplitude and the frequency information



0 votes



both the phase and amplitude information



12 votes

the frequency information only



0 votes



2. The natural frequency of a mass-spring system depends on

13 correct answers
out of 14 respondents



the mass of the system



13 votes



the stiffness of the system



14 votes

the force with which we excite the system



0 votes

the location of the force applied to the system



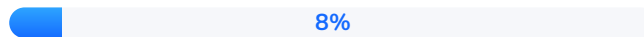
0 votes



3. The natural frequency of a mass-spring system increases when

10 correct answers
out of 13 respondents

the mass increases



1 vote



the stiffness increases



12 votes

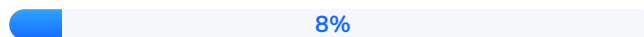


the mass decreases




10 votes

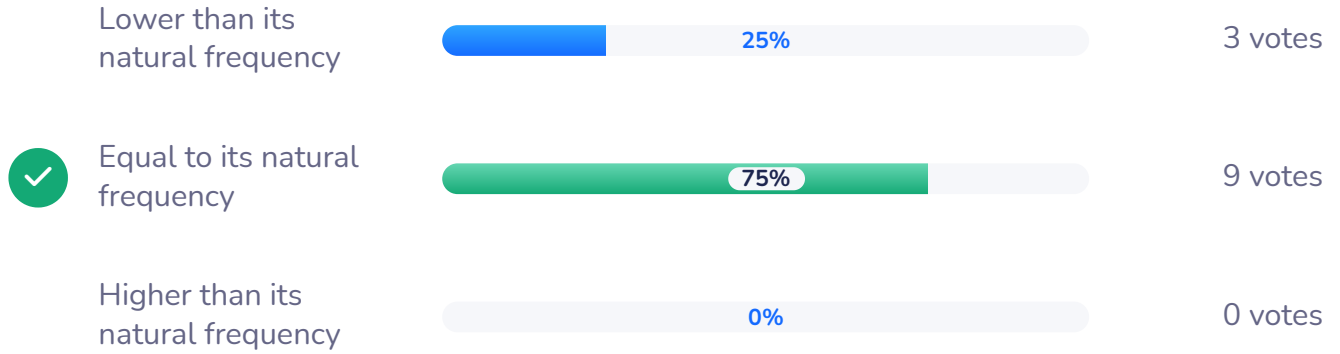
the stiffness decreases




1 vote

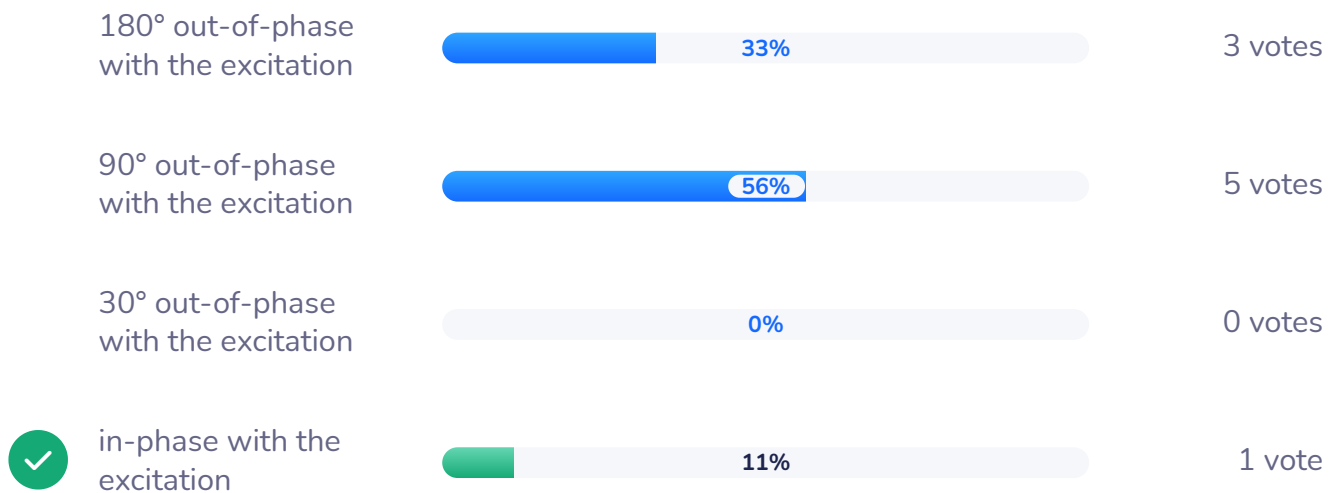
 **4. When an undamped 1DOF system is moved from the equilibrium position and then released, it oscillates freely at a frequency**

9 correct answers
out of 12 respondents



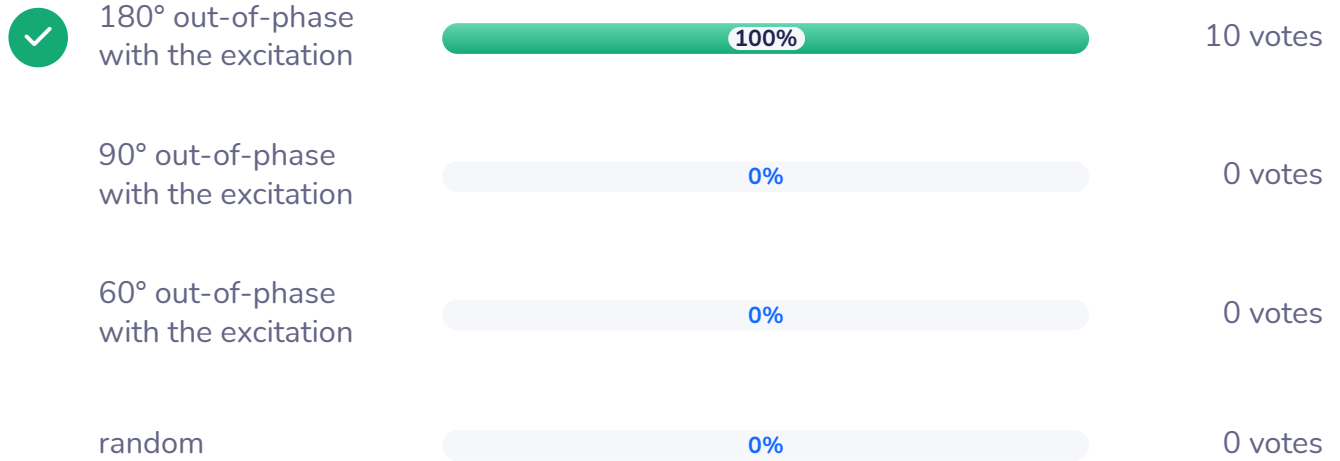
 **5. When excited with a harmonic force at a frequency below the natural frequency of an undamped 1DOF system, the motion of the mass is**

1 correct answer
out of 9 respondents



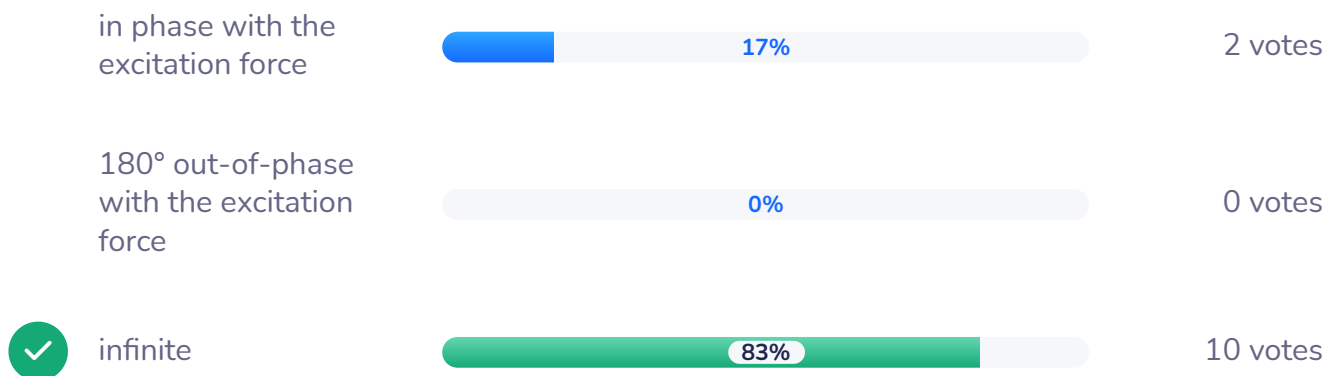
6. When excited with a harmonic force at a frequency above the natural frequency of an undamped 1DOF system, the motion of the mass is

10 correct answers
out of 10 respondents



7. For an undamped 1DOF system, when excited with a harmonic force at a frequency corresponding to its natural frequency, the amplitude of the motion is

10 correct answers
out of 12 respondents





8. It is possible to break a wine glass with your voice by

10 correct answers
out of 10 respondents

exciting it at very high frequency

0%

0 votes

exciting it at low frequency

0%

0 votes



exciting it at one of its natural frequencies

100%

10 votes



9. When damping increases in a 1DOF system, the amplitude of vibration when excited near its natural frequency

8 correct answers
out of 10 respondents

increases

10%

1 vote



decreases

80%

8 votes

remains constant

10%

1 vote



10. When damping increases in a 1DOF system, the amplitude of vibration when excited far from its natural frequency

8 correct answers
out of 10 respondents

decreases



1 vote

increases



1 vote



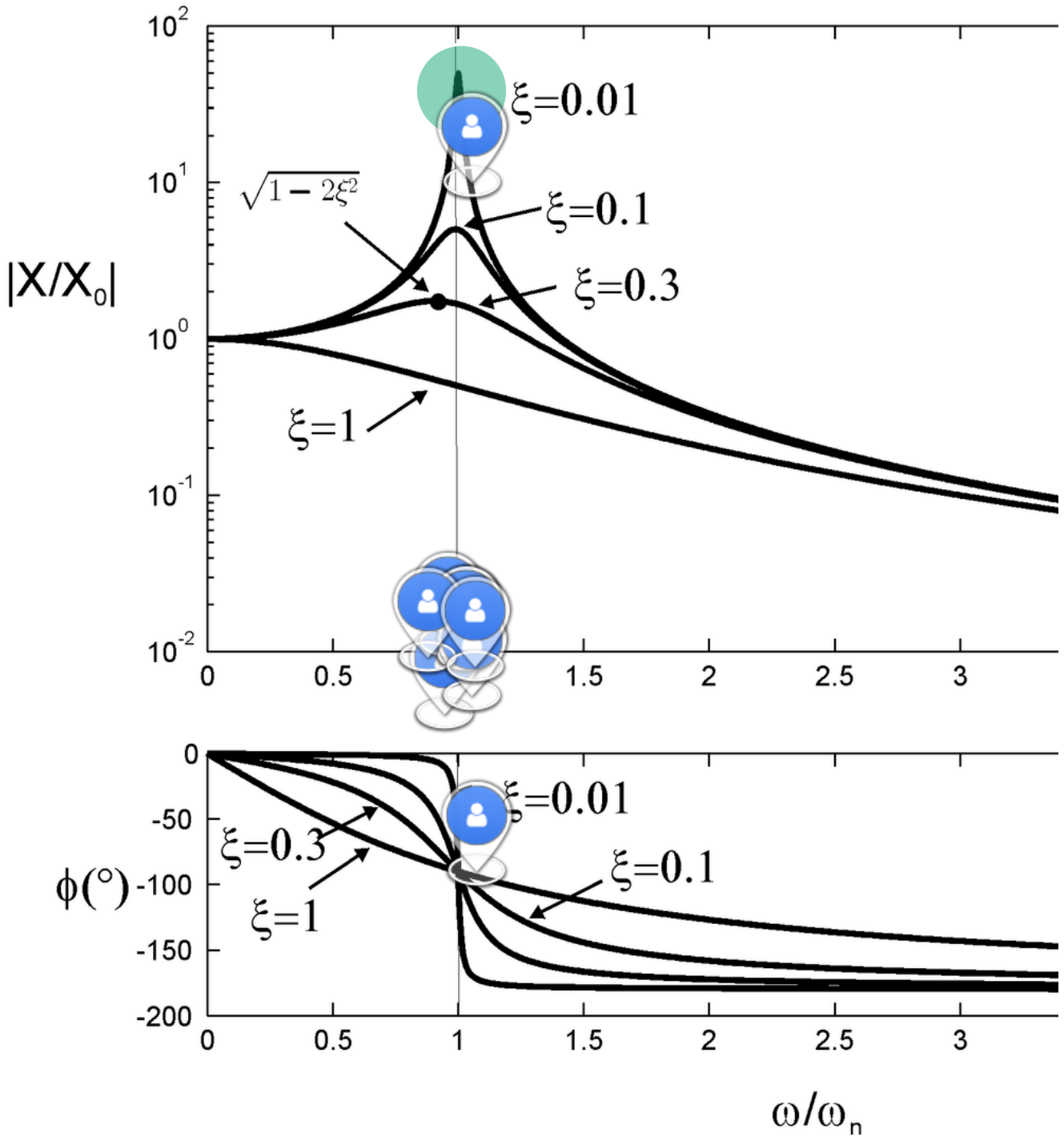
remains constant



8 votes

11. Where is the resonant frequency of the 1DOF system on this diagram ?

11 respondents

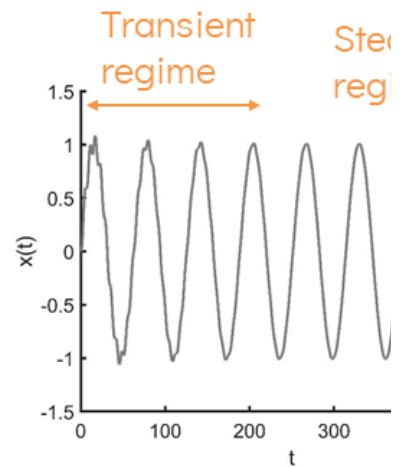
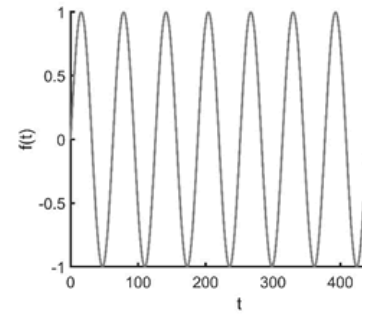
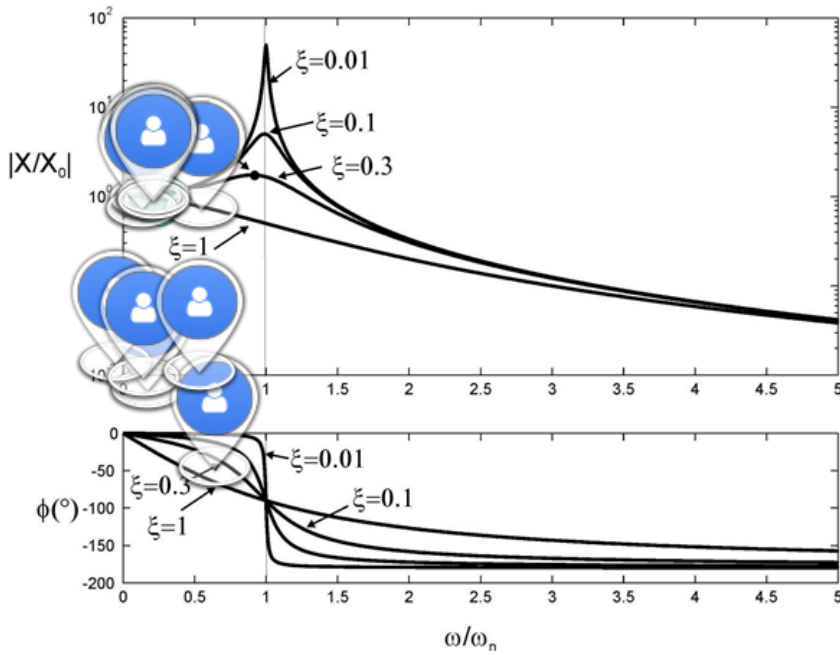




12. To which area of the bode plot does the time domain response presented in the graph correspond to ?

11 respondents

Bode plot vs time domain response

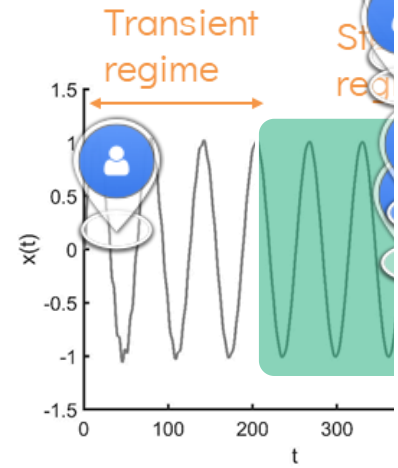
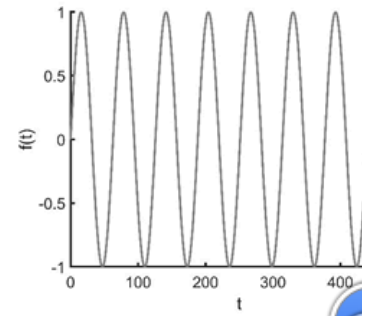
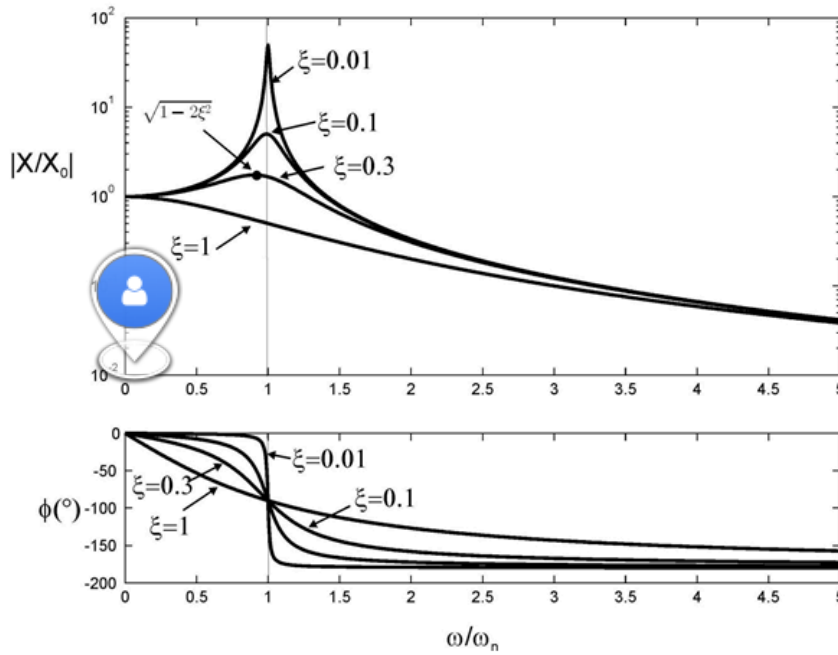




Which part of the time domain response actually corresponds to the hypothesis in the Bode plot ?

8 respondents

Bode plot vs time domain response





14. For a sine sweep excitation, which part of the time domain response corresponds to the resonance of the 1DOF system ?

12 respondents

Sine sweep excitation

