

## **Question 1** Welcome back, hope you had a most excellent spring break!

When we return, we'll be starting up in Taylor Ch 5.5, "Driven damped oscillations" and 5.6 (Resonance). Take a look back at those sections (or read them now, if you didn't get a chance before the break!)

If you wiggle a *damped* harmonic oscillator using a fixed external driving frequency, and you continue for a long time, how does the resulting frequency of vibration of the system compare to the driving frequency?

Question 1 options:

- Frequency of motion is GREATER than the driving frequency
- Frequency of motion is LESS than the driving frequency
- Frequency of motion is EQUAL TO the driving frequency
- There is a definite answer, but you would need more information than is given in the question.
- It's totally ambiguous/You can't predict this/ I don't know how to answer this...

## **Question 2**

Optional: If you want to elaborate or explain your reasoning for that previous question, we're interested!

## **Question 3**

Taylor has a formula for resonance amplitude (5.71), and then plots it twice, once in Fig 5.16, and once in Fig 5.17. They look the same!? But there's a subtle difference.

Briefly, what is different about the two plots?

Can you give a physical example of a physical situation where Fig 5.16 would be the appropriate one, and *another* physical situation where Fig 5.17 would be more sensible to plot?

## **Question 4**

In one of the two plots discussed in the previous question, the maximum is NOT exactly at the point labeled under the peak (i.e.  $w$  in Fig 5.16, or  $w_0$  in Fig 5.17)

Which curve is the one that's off? And, for that curve, is the peak a little to the LEFT, or a little to the RIGHT, of the labeled frequency? (How do you know?)

## **Information**

Every week, we ask you to submit a question you have about the reading assigned for the upcoming class. What seemed hard, was something confusing, what would you like us to spend class time on? And/or, if you prefer, make a (constructive) comment on someone else's question!

**The place to do this is our "Discussion forum".** After completing this survey, find the forum for this week, and post there!

This is, from here on out, extra credit rather than required (**but strongly recommended, please participate!**)