

Hi everyone,

From the feedback I received last Thursday and Friday, it seems that most students have identified from the available learning resources those that work best for them. Last week, I listed some of them:

- 1) Videos – *some indicated that reviewing them slowly is beneficial*
- 2) Textbook
- 3) Office Hours
- 4) Group Work
- 5) Help from friends, tutors, or someone else who speaks your language
- 6) Other online resources such as Kahn Academy, or just Googling a topic.
- 7) University study sessions
- 8) Other stuff?

Interestingly, there was no strong agreement as to which method worked best, and so I will do my best to support each student in the way they decide to learn.

I think that making these choices to achieve your desired learning outcomes and taking responsibility for the result is an important step to empowering yourself to learn. We will continue to explore different resources, as you may need to rely more heavily on the textbook, and less on videos for delivering content because I will identify more reading and provide fewer videos.

I was pleased with the results of the first midterm. It is impossible to compare it directly with other first midterms because the content and focus are fundamentally different. At the same time, the percentage of correct answers was clearly the highest I've had. It was also the best in terms of identifying the concepts at play. I think that most instructors would agree that this is the most important step in understanding a problem and carrying out a computation. I am impressed with how students have started picking up this way of solving problems by identifying what concept is at play. On the first midterm, you had considerable guidance with regard to the concepts; such as "Explain why using energy is the way to figure this out:" I will provide less guidance for the second midterm, and no guidance on the final exam. However, you will still be expected to start each question by identifying which of the four mechanics concepts are central to each step of the question without being asked. For example you might expect #3 from the midterm, the bullet-block-spring problem without me asking you for which of the 4 concepts is central to the problem and what is conserved and not conserved. You will need to organize this in the beginning of each question yourself.

In response to past feedback, I was able to post videos for Tuesday by 3:00 PM Sunday. Additionally, I carefully reviewed the problem set before posting it before midnight Wednesday night. In watching many of you work through the problem set, I was able to identify areas of concern and responded with guidance on the website's announcement page.

What I recommend:

- 1) When you watch a video, make sure you regard it with the same attention you would a one-on-one tutorial. This is often the way you prepare for class in order to support your group's efforts. Make sure you stop often to consider what is said. When a question is asked, take your time to figure it out.
- 2) Take the midterm corrections to heart. Make sure you fully understand all the underlying concepts so that if you see the same *or similar* problem in the future, you'll be very prepared. It is good to ask yourself questions like, "what if he gave us the compression of the spring in #3 and asked for the other variables?" or "what if the block were to swing upward?" or "what if the bullet were falling from deep space to the surface of some planet to get its speed?" ... for instance.
- 3) Treat problem sets the same as I advise in #2 above. These are potential exam questions. You should make sure you understand them.
- 4) When you don't know how to solve a problem, look through your resources. Do a word search in your textbook, or look at the table of contents. Investigate a similar example. Read some of the text. Don't just try to get the problem solved, but understand the underlying physics.
- 5) Work together, teach someone else what you know. Ask questions. Come to office hours. We are getting more and more students at office hours. It's fun... or it seems to be fun for most people.

For the coming week:

Monday, please bring in your completed problem sets knowing we'll have 10 minutes dedicated to them before handing them in.

Wednesday, hand in the corrections for midterm #1.

Always – draw a better picture; bigger. You will likely need to add things to it. It's not a small part of the problem solving, it deserves more space on your paper.