

Taking the Physics GRE. (Michael Dubson, Fall 2007)

The physics GRE is a long, difficult exam (170 minutes to complete 100 multiple-choice questions).

You should spend as much time as possible preparing for this exam. It is important that you spread your study time over months (or a year) prior to the exam. You can't prepare for a concert by rehearsing like crazy the week before. It is extremely important that you do well, if you want to get into the grad school of your choice.

There is no better way to prepare than by taking old exams and reviewing your undergraduate physics. A common mistake is to "save" one or more of the exams to take just before the real test, as a self-diagnostic. All this does is keep you from getting the most out of that test. You should take every test, multiple times, over an extended period.

Most of the questions can be answered with freshmen physics skills. Review all of your freshmen physics.

Stay calm during the exam. It is very difficult and all the other students think it is difficult too.

Watch your time closely! On average, you have 1.7 minutes per question. Work through the exam once quickly but calmly, skipping questions that you do not understand. Do not spend more than about 4 minutes on any one question during the first time through. After getting to the end of the exam, then go back and work on problems that you didn't finish. Remember, every question, easy or hard, is worth the same number of points. Rack up points on the easy questions first!

Never finish the exam early. Spend every available minute checking your answers or working on difficult questions.

If you can eliminate at least two of the five choices, then you can guess the answer, if you can't make further progress. Do not guess if you cannot eliminate any choices. There is a $\frac{1}{4}$ point penalty for each incorrect answer. No penalty for leaving the question blank.

Look for short-cuts to the answer. Can you eliminate choices using units? Conservation laws? Unreasonable values?

A very useful strategy is **taking limits**. Often you can eliminate choices by taking limits. For instance, suppose you have some messy formula for something that depends on speed v [$f = f(v)$] and you are trying to figure out whether the formula is correct. If you know how the formula should behave in the limits $v = 0$ and $v = \text{infinity}$, then you can check whether the formula $f = f(v)$ is correct in those limits. If the formula doesn't work in the known limits, then it is definitely wrong.