

Physics Readiness (“Math”) Exam for Physics 111

Students wishing to enroll in Physics 111 must demonstrate adequate competence in pre-calculus mathematics by achieving a satisfactory score on the Physics Readiness Exam. This exam will be given at the second class meeting. **No calculators** may be used for the exam. The passing score is usually 60%. It is our experience that students who cannot pass this test will not be able to successfully complete introductory physics, and therefore such students will be dropped from Physics 111 and Physics 112.

The readiness exam covers the following topics:

- Exponents, roots, and scientific notation - ability to add, subtract, multiply, divide, and take powers and roots of variables and numbers expressed in scientific notation.
- Algebra – Ability to solve linear and quadratic algebraic equations, including use of the quadratic formula. Ability to solve for one variable in terms of other variables. Ability to solve a set of two simultaneous equations.
- Geometry – Basic knowledge of angles, triangles, perimeters and areas of figures.
- Trigonometry – Ability to use sin, cos, and tan functions and the Pythagorean theorem.
- Graphing – Knowledge and ability to work with graphs of linear and quadratic functions, including understanding slopes and intercepts and ability to write the equation for a straight line based on knowledge of the coordinates of two points on the line.

There are several math review books that might be helpful in preparing for this test, such as:

- *Maths: A Student’s Survival Guide, 2nd edition*, by Jenny Olive (Cambridge University Press, 2003), ISBN: 0521017076
- *Just-in-Time Algebra and Trigonometry*, by Guntram Mueller and Ronald I. Brent (Addison-Wesley, 2004), ISBN-13: 9780321269430
- *Precalculus – A Self-Teaching Guide*, by Steve Slavin and Ginny Crisonino (Wiley, 2001), ISBN: 978-0-471-37823-5

We have recently found a very useful on-line course called ALEKS Math Preparation for College Physics that you can use to prepare for the readiness test. Go to the [ALEKS web site](http://www.aleks.com/sign_up) (www.aleks.com/sign_up) and sign up for course code UWFJC-CAFVU. The cost is \$30 for six weeks of access. (When the ALEKS system takes you to the page where you purchase an access code, choose the option “ALEKS Math (6 weeks) \$30” if there is no option for “Math Preparation for College Physics.” **You should start your preparation with ALEKS right away, so that you will be prepared for the Physics Readiness test.**

There is a free on-line self-assessment at the ALEKS web page that you can use to check your math skills and see if you need to do some preparation for the Readiness Test. **Since calculators cannot be used on the Readiness test, it might be good to work on your ALEKS review without a calculator.**