

The IA Assessment for Math Placement for Incoming Freshman

As we recognize that our grade 8 candidates are coming from a variety of math programs throughout the county, we have devised a placement assessment to help us determine which math course in our program would be most appropriate for each student. The content of the assessment is comprised of concepts typically found in traditional algebra I and geometry courses and is primarily skill and content based. The assessment is multiple-choice test where the use of a calculator is *not* permitted. There is also a penalty applied for incorrect answers to discourage guessing.

When students sit for the test in February, we recognize that most of the candidates are in the middle of an algebra course and thus will not have been exposed to second semester concepts. In scoring the test, we focus on their performance with those skills associated with the first semester of algebra, and we do not expect that they will score well on the later parts of the assessment. For those who have had algebra and are in the middle of a geometry course, and who also wish to consider a higher level placement in grade 9 math, we do expect that they will score higher on the assessment as they have been exposed to more topics.

Most of our incoming freshmen are placed in “Math 2.” Although this course is not itself a traditional geometry course, as it is based on an integrated approach to learning math, it presumes that students have already taken algebra I. Students who have not had an algebra course, or who have not retained a basic level of algebra skill, would be at a significant disadvantage in this course. Thus, *to be admitted to the IA, students must successfully complete an algebra course.*

Freshmen who score particularly well on the placement assessment may be placed in Math 3, a course similar in content and challenge to a traditional algebra II. This will place them on track to do the IB Higher Level (HL) math program in grades 11 and 12. In this program students will take their calculus class in grade 11, as well as complete coursework equivalent to second semester university calculus in grade 12. The program is very rigorous and is intended to challenge the most talented of our students in math. Thus, we proceed cautiously when considering freshman placement into this program.

Although we primarily use the results of this assessment to determine if a candidate is best placed in our Math 2 or Math 3 course as a freshman, we also use the results to determine if their skill level in mathematics indicates that they may not be successful in a program that presumes basic competence in algebra. Should a student score exceptionally low, there is a second test in May that gives the candidate a second chance to demonstrate competence in algebra. If the student still scores low, then that student will be required to complete a summer school course in algebra to be admitted to the IA.

On the placement assessment, students are given an opportunity to demonstrate competence with algebra topics such as (but not limited to):

order of operations, ratios and percents, operations with fractions, basic probability, solving linear equations and inequalities, graphing linear equations and inequalities, slope and slope-intercept form of equations, solving systems of equations and inequalities, polynomial expressions, radical and rational expressions, factoring, solving quadratic equations, basic quadratic graphing, solving rational equations, distance and midpoint formulas, equations of circles.

Geometry topics include (but are not limited to):

basic angle and line relationships, parallel and perpendicular lines, congruent triangles, relationships in triangles, right triangle trigonometry, relationships in quadrilaterals, circles, area and volume, surface area.