



Mathematical Competency Skills for Incoming Freshmen

General Skills: *Students should be able to:*

- add, subtract, multiply and divide integers with facility
- apply the order of operations correctly
- plot values and graph inequalities on a number line
- plot points on a coordinate plane
- evaluate expressions involving absolute value
- evaluate square roots (exact integer or estimating non-integer)
- define, recognize and explain the relationship between natural numbers, whole numbers, integers and rational numbers
- apply the commutative, associative, distributive, additive inverse, additive identity, multiplicative inverse and multiplicative identity properties
- use a ruler and protractor
- convert measurements to different units
- report answers in appropriate units
- use and interpret scientific notation
- solve word problems utilizing the various skills listed on this document

Fractions and Decimals: *Students should be able to:*

- add, subtract, multiply and divide fractions and decimals
- convert between fractions and decimals
- convert between improper fractions and mixed numbers
- reduce fractions
- use appropriate terminology to explain work with fractions (LCD, GCF, factors, etc)
- set up and solve proportions
- convert between percents and decimals
- understand place value of decimals and properly round to a designated place
- distinguish between terminating and repeating decimals and recognize irrational numbers

Algebra: *Students should be able to:*

- understand the concept of a variable
- distinguish between expressions, equations and inequalities
- utilize formulas by substituting values into variables and simplifying
- add and subtract like terms
- solve one-step equations
- solve proportions through cross-multiplication

Geometry: *Students should be able to:*

- calculate the perimeter/circumference and area of circles, rectangles, squares and triangles
- distinguish between lines, rays and segments
- classify angles as acute, right, obtuse, straight, supplementary or complementary

Mathematical Practices for Success: *Students should be able to:*

- show work or evidence of thought processes in solving all problems
- meet teachers' standards for formatting daily work
- make sense of problems and persevere in solving them