



Personal. Global. Transformational.

## Math Placement Assessment Study Guide

The tests may include, but are not limited to, the following topics.

### **TEST A: Algebra**

#### *Basic Algebra*

- The Real Number Line
- Operations with Real Numbers
- Properties of Real Numbers
- Combine Like Terms
- Area of a Circle

#### *Linear Equations in One Variable*

- Solving Linear Equations
- Evaluating and Solving Formulas
- Applications
- Solving Systems of Linear Equations
- Solving Inequalities in One Variable

#### *Linear Equations in Two Variables*

- Cartesian Coordinate System and Linear Equations:  $Ax + By = C$
- Slope - Intercept Form:  $y = mx + b$
- Applications

#### *Exponents and Polynomials*

- Properties of Exponents
- Addition, Subtraction and Multiplication with Polynomials
- Factoring Polynomials
  - GCF, Trinomials, Difference of Two Squares
- Factor to Solve Degree Two Polynomial Equations (Quadratic Equations)

#### *Rational Expressions*

- Reduce to Lowest Terms
- Addition, Subtraction, Multiplication and Division with Rational Expressions

#### *Roots and Radicals*

- Simplify Roots and Radicals
- Addition and Subtraction of Radicals

## **Test B: Intermediate Algebra and Functions**

*Intermediate Algebra added to topics listed for **Test A***

Rationalizing denominators

Quadratic equation and quadratic formula

*Functions and Their Graphs*

Analyzing graphs of functions

Transformations of functions

Combinations of functions, composite functions

Inverse functions

Inequalities and graphs involving absolute values

*Polynomial Functions*

Quadratic function

Polynomial functions of higher degree

Zeros (roots) of polynomial functions

*Rational Functions*

Rational functions and asymptotes

Graphs of rational functions

*Exponential and Logarithmic Functions*

Exponential functions and their graphs

Logarithmic functions and their graphs

Properties of logarithm

Exponential and logarithmic equations

## Test C: Precalculus

### *Functions and inequalities*

Domains of functions

Polynomial inequalities

### *Basic Trigonometry*

Angles and their measure

Right triangle trigonometry

Trigonometric functions of any angle

Graphs of sine and cosine functions

Graphs of other trigonometric functions

Inverse trigonometric functions

### *Analytic Trigonometry*

Using fundamental identities

Verifying trigonometric identities

Solving trigonometric equations

Sum and difference formulas

Double-angle and half-angle formulas