MCA Math Skills – *What will my child need to know and do?*

	Grade 6	Grade 7	Grade 8	Grade 11
Number & Operations	• Represent and compare positive rational numbers as fractions, decimals, percents and ratios • Multiply and divide fractions, decimals and mixed numbers	• Represent and compare positive and negative rational numbers as integers, fractions, and decimals • Calculate with positive and negative rational numbers as well as whole number exponents	• Compare, classify and represent real numbers	• Use real numbers to quantify information and solve real-world problems
Algebra	• Understand Ratio • Represent relationships with patterns, tables, graphs and rules • Simplify and evaluate numerical and algebraic expressions with positive rational numbers • Solve 1-step equations by maintaining equality	• Understand proportionality • Represent proportional relationships with tables, symbols and graphs • Simplify and evaluate numerical and algebraic expressions with positive and negative rational numbers and grouping symbols • Solve equations symbolically, graphically and numerically	• Understand functions • Represent linear functions with tables, symbols and graphs • Simplify and evaluate numerical and algebraic expressions using algebraic properties • Solve equations and inequalities symbolically and graphically	• Represent and analyze problems using numeric, graphic and symbolic methods for the following functions: linear, step, absolute value, quadratic and exponential • Solve equations and inequalities numerically, graphically and symbolically
Geometry	• Find measures of angles, area of quadrilaterals, perimeter and area of irregular figures, surface area and volume of prisms • Use ratios to convert within measurement systems	• Solve problems involving circles and related geometric figures • Analyze the effect of change of scale, translations and reflections	• Use the Pythagorean Theorem and its converse • Solve problems involving parallel and perpendicular lines on a coordinate system	• Represent and understand 2 and 3 dimensional shapes • Apply basic theorems of plane geometry, right triangle trigonometry and coordinate geometry
Data Analysis & Probability	• Represent probabilities using fractions, decimals and percents and use to solve problems	• Use mean, median and mode to draw conclusion about data • Calculate probabilities	• Use scatterplots and approximate lines of best fit to interpret data	• Represent data and use various measures associated with data to draw conclusions and identify trends • Use counting procedures, calculate probabilities and apply theoretical probability