

MATHEMATICS

Grade 8 mathematics –

The Number System:

Understanding and comparing rational and irrational numbers

Understanding and performing operations with rational and irrational numbers

Understanding and using the properties of integer exponents

Understanding and using the laws of exponents to simplify expressions

Understanding and performing operations with scientific notation

Understanding and using irrational numbers to solve problems involving geometric shapes

Expressions and Equations:

Understanding and using functions to model relationships between quantities

Understanding and solving problems with linear equations and systems of linear equations

Understanding and solving problems with nonlinear equations and systems of nonlinear equations

Understanding and using the Pythagorean theorem and the distance formula to solve problems

Functions:

Understanding and interpreting functions represented numerically, graphically, and symbolically

Understanding and using functions to model real-world situations

Understanding and using inverse functions

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Geometry:

Understanding and applying the properties of congruent and similar figures

Understanding and using the Pythagorean theorem to find the distance between two points

Understanding and using the properties of circles to find circumference, area, and arc length

Statistics and Probability:

Understanding and using statistical measures to describe and compare data

Understanding and using scatterplots to analyze data

Understanding and calculating probability of events

Mathematical Practices:

Developing effective problem-solving strategies and applying them to real-world and mathematical problems

Developing effective communication and collaboration skills

Developing effective critical thinking and reasoning skills

Functions:

Understanding and using linear and nonlinear functions to model real-world situations

Understanding and solving problems with systems of linear and nonlinear equations

Understanding and graphing quadratic functions