

MATH 8

Apply and Extend Understanding of Operations with Rational and Irrational Numbers

- Apply previous understanding of operations with rational numbers to include an understanding of irrational numbers and operations with radicals (Operations with all other rational numbers are being practiced in Math 8, with irrational numbers being new in Math 8)

Understand the Connections Between Proportional Relationships, Linear Functions, and Linear Equations

- Identify the slope in a graph as the unit rate in a proportional relationship
- Use similar triangles to explain why the slope is the same between any two distinct points on a non-vertical line

Simplify Expressions and Solve Equations

- Solve linear equations and inequalities in one variable, recognizing when there are zero, one or infinite solutions
- Analyze and solve, by graphing only, pairs of simultaneous linear equations
- Identify, evaluate and compare linear functions, linear equations, and systems of linear equations

Represent and Analyze Relationships

- Understand and apply the Pythagorean Theorem and its converse in real-world and mathematical problems in two and three dimensions, and to find the distance between two points in a coordinate system
- Understand how to simplify radicals with emphasis on square roots
- Understand solutions of square roots

Mathematical Practices

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning