

Math 9

Number Strand



I Can Statements:

1. Powers - Demonstrate an understanding of power with integral bases (excluding base 0) and whole number exponents by;

- representing repeated multiplication, using powers
 - using patterns to show that a power with an exponent of zero is equal to one
 - solving problems involving powers.
- ☐ I can identify the parts of a power (base, exponent, brackets) and their roles.
 - ☐ I can write a repeated multiplication number sentence as a power.
 - ☐ I can write a power as a repeated multiplication.
 - ☐ I can evaluate a power with a positive or negative base.
 - ☐ I can show that a base with an exponent of zero is equal to one.
 - ☐ I can solve problems involving powers.

2. Exponent Laws - Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents:

- $(a^m)(a^n) = a^{m+n}$
 - $a^m \div a^n = a^{m-n}, m > n$
 - $(a^m)^n = a^{mn}$
 - $(ab)^m = a^m b^m$
 - $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}, b \neq 0$
- ☐ I can prove why exponent laws work using examples.
 - ☐ I can simplify expressions using the exponent laws.
 - ☐ I can evaluate expressions using exponent laws.

3. Rational Numbers - Demonstrate an understanding of rational numbers by:

- comparing and ordering rational numbers
 - solving problems that involve arithmetic operations on rational numbers.
- ☐ I can define the term rational number.
 - ☐ I can write rational numbers using equivalent numerical representations.

- ☐ I can order a set of rational numbers.
 - ☐ I can identify a rational number between two given rational numbers.
 - ☐ I can compare rational numbers using mathematical language ($<$, $>$, and $=$).
 - ☐ I can solve problems using arithmetic operations on rational numbers.
- 4. Order of Operations** - Explain and apply the order of operations, including exponents, with and without technology.
- ☐ I can explain order of operations.
 - ☐ I can apply order of operations.
- 5. Square Roots of Perfect Squares** - Determine the square root of positive rational numbers that are perfect squares.
- ☐ I can determine if a rational number is a perfect square.
 - ☐ I can identify the square root of a rational number that is a perfect square.
- 6. Approximating Square Roots** - Determine an approximate square root of positive rational numbers that are non-perfect squares.
- ☐ I can estimate the square root of a rational number.
 - ☐ I can use technology to determine the square root of a rational number.

VOCABULARY

Math 7

Divisible	Divisor	Terminating Decimal
Factor	Undefined	Repeating Decimal
Multiple	(division by zero)	Round
Prime Number	Sum	Approximation
Composite Number	Difference	Concretely
Natural Numbers	Place Value	(with manipulatives)
Whole Numbers	Area	Pictorially
Product	Expression	(draw a picture)
Quotient	Equivalent	Symbolically
Remainder	Percent	(write a math sentence)
Even	Greater Than	Equivalent Fraction
Odd	Less Than	Denominator
Dividend	Equal To	Numerator
	Bar Notation	Improper Fraction

Proper Fraction
Mixed Number
Lowest Terms
Reduce
Simplify
Common Denominator
Integer
Positive
Negative
Zero Principle
Zero Pairs
Opposite Integers
Number Line

Ascending
Descending
Math 8
Perfect Square
Square Root
Factor
Square
Squared
Benchmark
Approximate
Estimate
Rational
Irrational

Percent Of
Percent Off
Ratio
Rate
Unit Rate
Part to Part
Part to Whole
Proportion
Math 9
Power
Base
Exponent
Order of Operations