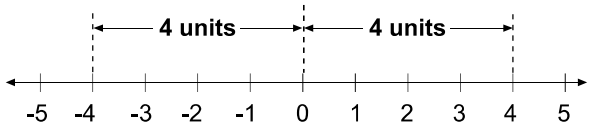
Vocabulary

Vocabulary

Use the vocabulary words and definitions below as a reference for this unit.

absolute value .....a number's distance from zero (0) on a number line; distance expressed as a positive value
Example: The absolute value of both 4, written $|4|$, and negative 4, written $|-4|$, equals 4.



common denominator .....a common multiple of two or more denominators
Example: A common denominator for $\frac{1}{4}$ and $\frac{5}{6}$ is 12.

constant .....a quantity that always stays the same

coordinate grid or **plane** ...a two-dimensional network of horizontal and vertical lines that are parallel and evenly spaced; especially designed for locating points, displaying data, or drawing maps

coordinate plane .....the plane containing the x- and y-axes

coordinates .....numbers that correspond to points on a coordinate plane in the form (x, y), or a number that corresponds to a point on a number line

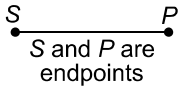
degree (°) .....common unit used in measuring angles

Vocabulary

denominator ..... the bottom number of a fraction, indicating the number of equal parts a whole was divided into
Example: In the fraction $\frac{2}{3}$ the denominator is 3, meaning the whole was divided into 3 equal parts.

distance ..... the length of a segment connecting two points

endpoint ..... either of two points marking the end of a line segment



equation ..... a mathematical sentence stating that the two expressions have the same value
Example: $2x = 10$

expression ..... a mathematical phrase or part of a number sentence that combines numbers, operation signs, and sometimes variables
Examples: $4r^2$; $3x + 2y$; $\sqrt{25}$
An expression does *not* contain equal (=) or inequality ($<$, $>$, $\leq$, $\geq$, or $\neq$) signs.

factor ..... a number or expression that divides evenly into another number; one of the numbers multiplied to get a product
Examples: 1, 2, 4, 5, 10, and 20 are factors of 20 and $(x + 1)$ is one of the factors of $(x^2 - 1)$.

formula ..... a way of expressing a relationship using variables or symbols that represent numbers

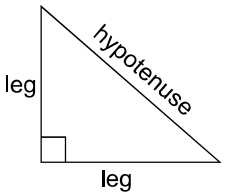
Vocabulary

graph ..... a drawing used to represent data
Example: bar graphs, double bar graphs, circle graphs, and line graphs

graph of a point ..... the point assigned to an ordered pair on a coordinate plane

horizontal ..... parallel to or in the same plane of the horizon

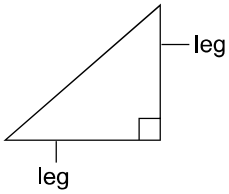
hypotenuse ..... the longest side of a right triangle; the side opposite the right angle



integers ..... the numbers in the set
{… , -4, -3, -2, -1, 0, 1, 2, 3, 4, …}

intersect ..... to meet or cross at one point

leg ..... in a right triangle, one of the two sides that form the right angle



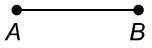
length (l) ..... a one-dimensional measure that is the measurable property of line segments

line ($\leftrightarrow$) ..... a collection of an infinite number of points forming a straight path extending in opposite directions having unlimited length and no width

linear equation ..... an algebraic equation in which the variable quantity or quantities are raised to the zero or first power and the graph is a straight line
Example: $20 = 2(w + 4) + 2w$; $y = 3x + 4$

Vocabulary

line segment (—) .....a portion of a line that consists of two defined endpoints and all the points in between
Example: The line segment *AB* is between point *A* and point *B* and includes point *A* and point *B*.

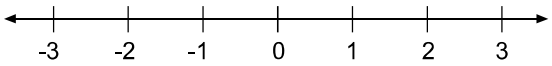


midpoint (of a line segment) .....the point on a line segment equidistant from the endpoints

negative integers .....integers less than zero

negative numbers .....numbers less than zero

number line .....a line on which ordered numbers can be written or visualized

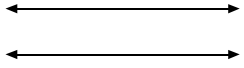


numerator .....the top number of a fraction, indicating the number of equal parts being considered
Example: In the fraction $\frac{2}{3}$, the numerator is 2.

ordered pair .....the location of a single point on a rectangular coordinate system where the first and second values represent the position relative to the *x*-axis and *y*-axis, respectively
Examples: (*x*, *y*) *or* (3, -4)

parallel (||) .....being an equal distance at every point so as to never intersect

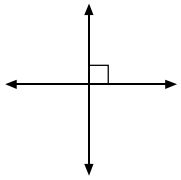
parallel lines .....two lines in the same plane that are a constant distance apart; lines with equal slopes



Vocabulary

perpendicular (⊥) ..... two lines, two line segments, or two planes that intersect to form a right angle

perpendicular lines ..... two lines that intersect to form right angles

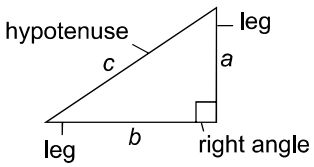


point ..... a specific location in space that has no discernable length or width

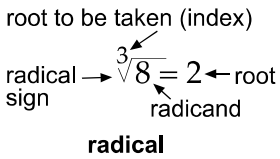
positive numbers ..... numbers greater than zero

product ..... the result of multiplying numbers together
Example: In 6 x 8 = 48, the product is 48.

Pythagorean theorem ..... the square of the hypotenuse (c) of a right triangle is equal to the sum of the square of the legs (a and b), as shown in the equation $c^2 = a^2 + b^2$



radical ..... an expression that has a root (square root, cube root, etc.)
Example: $\sqrt{25}$ is a radical
Any root can be specified by an index number, b, in the form $\sqrt[b]{a}$ (e.g., $\sqrt[3]{8}$).



radical

A radical without an index number is understood to be a square root.

radical expression ..... a numerical expression containing a radical sign
Examples: $\sqrt{25}$ $2\sqrt{25}$

Vocabulary

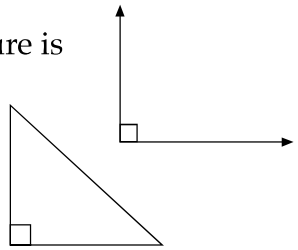
radical sign ($\sqrt{\ }$) ..... the symbol ($\sqrt{\ }$) used before a number to show that the number is a *radicand*

radicand ..... the number that appears within a radical sign
Example: In $\sqrt{25}$, 25 is the radicand.

reciprocals ..... two numbers whose product is 1; also called *multiplicative inverses*
Examples: 4 and $\frac{1}{4}$ are reciprocals because $\frac{4}{1} \times \frac{1}{4} = 1$; $\frac{3}{4}$ and $\frac{4}{3}$ are reciprocals because $\frac{3}{4} \times \frac{4}{3} = 1$; zero (0) has no multiplicative inverse

right angle ..... an angle whose measure is exactly 90°

right triangle ..... a triangle with one right angle



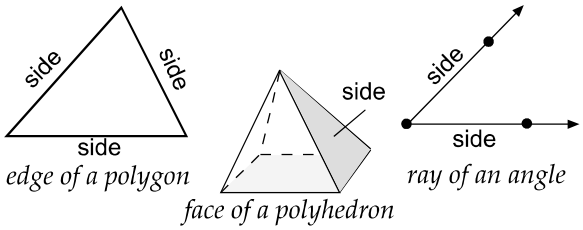
rise ..... the vertical change on a graph between two points

root ..... an equal factor of a number
Examples:
In $\sqrt{144} = 12$, 12 is the square root.
In $\sqrt[3]{125} = 5$, 5 is the cube root.

run ..... the horizontal change on a graph between two points

Vocabulary

side ..... the edge of a polygon, the face of a polyhedron, or one of the rays that make up an angle
Example: A triangle has three sides.



simplest radical form ..... an expression under the radical sign that contains no perfect squares greater than 1, contains no fractions, and is not in the denominator of a fraction
Example: $\sqrt{27} = \sqrt{9 \bullet 3} = \sqrt{9} \bullet \sqrt{3} = 3\sqrt{3}$

simplify a fraction ..... write fraction in lowest terms or simplest form

slope ..... the ratio of change in the vertical axis (y-axis) to each unit change in the horizontal axis (x-axis) in the form $\frac{\text{rise}}{\text{run}}$ or $\frac{\Delta y}{\Delta x}$; the constant, m, in the linear equation for the slope-intercept form $y = mx + b$

slope-intercept form ..... a form of a linear equation, $y = mx + b$, where m is the slope of the line and b is the y-intercept

square (of a number) ..... the result when a number is multiplied by itself or used as a factor twice
Example: 25 is the square of 5.

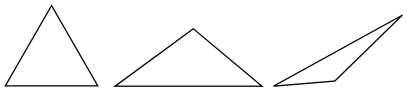
square root ..... a positive real number that can be multiplied by itself to produce a given number
Example: The square root of 144 is 12 or $\sqrt{144} = 12$.

Vocabulary

standard form (of a linear equation) ..... $ax + by + c = 0$, where a, b, and c are integers and $a > 0$

sum ..... the result of adding numbers together
Example: In $6 + 8 = 14$, the sum is 14.

triangle ..... a polygon with three sides



value (of a variable) ..... any of the numbers represented by the variable

variable ..... any symbol, usually a letter, which could represent a number

vertical ..... at right angles to the horizon; straight up and down

x-axis ..... the horizontal number line on a rectangular coordinate system

x-coordinate ..... the first number of an ordered pair

x-intercept ..... the value of x at the point where a line or graph intersects the x-axis; the value of y is zero (0) at this point

y-axis ..... the vertical number line on a rectangular coordinate system

y-coordinate ..... the second number of an ordered pair

y-intercept ..... the value of y at the point where a line or graph intersects the y-axis; the value of x is zero (0) at this point