KYSU STANDARDS for MATHEMATICS

Level 5 Student Glossary

absolute value (| |) *the distance from a number to zero on the number line; it is neither positive nor negative,* e.g. | -2 | = 2 and | +2 | = 2

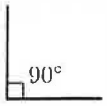
algebraic expression *the translation of a real-world situation into a mathematical expression. Expressions have numerical value, but no equal sign. Equations are sometimes confused with expressions*

angles *two lines that meet at an endpoint called a vertex. An angle can be named by the three letters that form it or by the letter that is at its vertex*

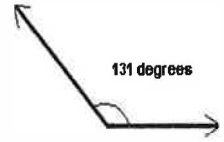
Types of angles include:

acute angle *an angle measuring between 0 and 90 degrees*

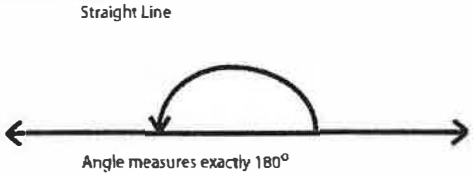
right angle *an angle measuring 90 degrees*



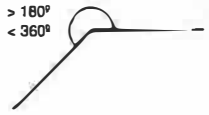
<u>obtuse</u> angle *an angle measuring between 90 and 180 degrees*



<u>straight</u> angle *an angle measuring 180 degrees*



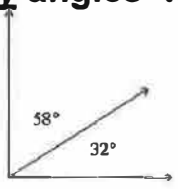
<u>reflex</u> angle *an angle measuring more than 180 but less than 360 degrees*



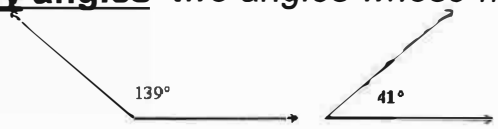
Angle relationships include:

<u>congruent</u> angles *angles whose measurements are equal*

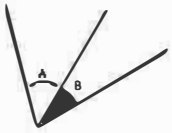
<u>complementary</u> angles *two angles whose measurements add up to 90 degrees*



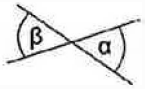
supplementary angles *two angles whose measurements add up to 180 degrees*



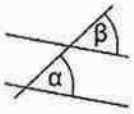
adjacent angles *angles that have a common side and a common vertex*



vertical angles *angles that are opposite each other when two lines cross (also called **opposite** angles)*



corresponding angles *angles in the same position in relation to a line (transversal) cutting across two parallel lines*



area *the amount of space inside the boundary of a 2-dimensional figure, expressed in square units*

Associative Property *a mathematical rule stating that when more than two numbers are added or multiplied, the result will be the same no matter how the numbers are grouped*

circumference *the distance around a circle; the perimeter of a circle*

coefficients *the number part of the terms with variables, e.g. in 4x, the coefficient is 4*

Commutative Property *a mathematical rule stating that the order in which numbers are added or multiplied does not change the sum or product*

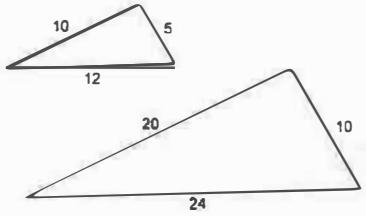
composite number *a positive number that can be divided evenly by numbers other than 1 or itself*

congruence *the same shape and size* ≅

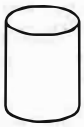
constant rate of change *the constant slope of a linear function's straight-line graph*

coordinate grid *a set of points formed by a grid with a horizontal (x-) and a vertical (y-) axis*

corresponding sides *the matching sides of similar figures*



cylinder *a 3-dimensional figure with two congruent circular bases and straight sides*



data *information (often numerical) that is collected and analyzed*

Distributive Property of Multiplication *a mathematical rule over addition and subtraction in which the following is true for all numbers a, b, and c:* $a(b + c) = ab + ac$ *or* $a(b - c) = ab - ac$

equation *a number sentence using math symbols to say that two things are the same*

exponent *a small raised number at the right of a base number (3 in* 4^3*) that tells how many times the base number is multiplied by itself (4 x 4 x 4)*

factors *numbers or algebraic expressions that are multiplied together (e.g., 3 and 4 are factors of 12; 2 and x are factors of 2x)*

graph *see appendix*

greatest common factor (GCF) *the largest factor that 2 or more numbers have in common*

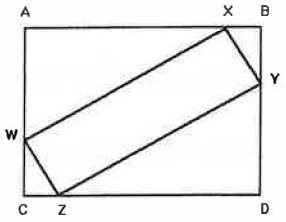
horizontal ⟷ *parallel to the horizon; flat and level*

hypotenuse *the longest side of a right triangle, opposite the right angle*

improper fractions *fractions with a value equal to or greater than one: fractions in which the numerator is equal to or greater than the denominator, e.g.* $\frac{11}{5}$

inequality ≠ *in algebra, a statement indicating that the value of one quantity or expression is not equal to another*

inscribed figure *a figure that is drawn inside another figure*



integer *any positive or negative whole number or zero*

integer exponent *a positive or negative integer, or zero, used as an exponent*

inverse operation *the opposite operation, e.g. addition and subtraction are inverse operations*

least common multiple (LCM) *the smallest number, other than zero, that is a common multiple of two or more numbers*

like terms *algebraic terms that have the same letters raised to the same powers*

linear equation *equations that do not contain a variable to any power (exponent) greater than 1; an equation whose graph is a straight line*

mathematical symbols *signs used to indicate a mathematical relation or operation, e.g.* =, ≠, √, ^{2}, ^{3} ≈, ≥, ≤, π, ( ), ∥, ∟, °, ⊥, | |, ∠, ≅, ~

maximum *the largest number in a set; the upper limit of variation*

mean *the average of a set of numbers, obtained by dividing the sum of the set by the number of numbers in the set*

measurement systems:

> **customary** *the system commonly used in the United States; e.g. feet, miles, pounds, and ounces*
>
> **metric** *the system used throughout most of the world that is based on the powers of ten (common units are meters, grams, liters, etc.)*

median *the middle number of a set of numbers arranged in order*

minimum *the smallest number in a finite set of numbers; the lower limit of variation*

mixed number *an amount written as a whole number and a fraction (7¾)*

mode *in a list of data, the number occurring most often*

multiple *the result of multiplying a given number by the counting numbers (0, 1, 2, 3, and so on)*

order of operations (PEMDAS)

> **P: Parentheses,** *perform all operations within parentheses first*
>
> **E: Exponents,** *evaluate exponents*

M/D: Multiply/Divide, *working from left to right*

A/S: Add/Subtract, *working from left to right*

ordered pair *a pair of numbers that names a point on a coordinate grid; presented in parentheses as (the x-coordinate, the y-coordinate)*

paired data *data that fall normally into pairs; data that occurs in ordered pairs*

parallel (∥) *extending in the same direction, everywhere equidistant, and not meeting*

parentheses *in algebra, rounded brackets ( ) used as symbols to designate multiplication or to group things*

pattern *an arrangement of numbers, shapes or terms formed by following a particular rule*

percentage of decrease *the rate that an amount has decreased over time*

percentage of increase *the rate that an amount has increased over time*

perimeter *the distance around a flat (2-D) figure*

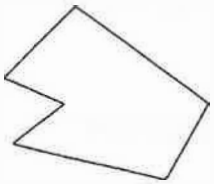
perpendicular (⊥) *standing at right angles to the plane; exactly upright*

pi *approximately 3.14; pi is the constant ratio of the circumference of a circle to the diameter, represented by the symbol* π

point *a single, exact location often represented by a dot:* •

point of origin *the point at which the x-axis and y-axis in a coordinate grid intersect; the point represented by the ordered pair (0,0)*

polygon *a 2-dimensional closed figure with three or more straight sides*



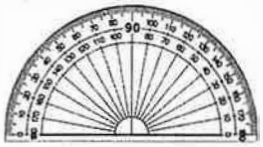
prime number *positive integer that can only be divided evenly by 1 or itself*

probability *the chance of something happening*

> **dependent probability** *the chance that something will occur depends on the outcome of a previous event*
>
> **independent probability** *the chance that something will occur is not affected by the outcome of a previous event*

proportion *an equation that compares two equal ratios or fractions, e.g. 2/3 = 8/12*

protractor *a tool used to measure the number of degrees in an angle*



Pythagorean relationship *in a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides:* $a^2 + b^2 = c^2$

quadrant *one-fourth of a coordinate grid, formed by the intersecting axes*

range *the difference between the lowest number and the highest number in the set*

rate *a number describing change, calculated by computing a ratio of two quantities*

rate of change *the speed at which a variable changes over a specific period of time*

ratio *a comparison of two like quantities (amounts expressed in the same units), e.g., 1:3, 1 to 3, 1/3*

rational numbers *the set of all real integers and fractions.*

Any rational number *can be written as the ratio, or quotient, of two integers, e.g. fractions* ($\frac{2}{3}$), *terminating decimals (.75), and repeating decimals (.666…).*

real numbers *the set of numbers which describe real-world quantities such as amounts, distances, age, temperature, etc. A* real number *can be an integer, a fraction, or a decimal. They can also be either rational or irrational*

rectangular solids *three-dimensional figures in which all sides are rectangles and all corners are square, e.g.* 

regularity *a property of polygons: the property of having equal sides and equal angles*

scientific notation *a way of writing very large numbers and very small decimals in which the numbers are expressed as the product of a number between 1 and 10 and a power of 10*

sequence *a series of repeated patterns*

simple interest *interest paid on the original principal only;*

simple interest formula: interest = principal x rate x time or i=prt

slope *the ratio of rise to run that results in a number that measures the steepness of a line*

> **positive slope** *the slope of a line that rises from left to right*
>
> **negative slope** *the slope of a line that falls from left to right*
>
> **zero slope** *the slope of a horizontal line*
>
> **undefined slope** *the slope of a vertical line*

similarity *the same shape but different sizes*

spread *the numeric difference between the lowest and the highest values in a set of data*

square root √ *a number that when multiplied by itself gives the original number (√9 = 3 because 3 x 3 = 9)*

squaring *multiplying a number by itself, usually shown as the number and the exponent* ^{2} *EX:* 3^2

standard deviation *a measure of how spread out numbers are; the square root of the variance*

substitution *the act of replacing a letter in an equation or formula with its value*

symmetry *the state of having two halves that are mirror images of each other*

table *see appendix*

three dimensional (3-D) *having height, width, and depth*

> *Common 3-D figures include: cubes, cylinders, cones, pyramids, rectangular solids*

transformation *a geometric term used to indicate a change in the position of a shape on a coordinate plane, moving it from one place to another. The three basic transformations are:*

reflection *the figure does not change size but is simply flipped over a line of reflection; a mirror image*

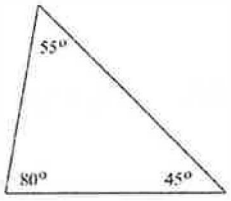
rotation *the figure turns around or rotates around one fixed point on the graph*

translation *every point of the figure moves the same distance in the same direction; the figure simply slides to another place*

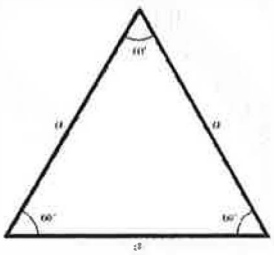
trend *a continuing change in the same general direction*

triangle *a three-sided polygon*

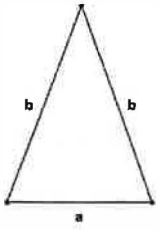
acute triangle *all angles less than 90°*



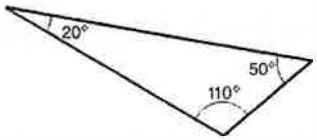
equilateral triangle *equal sides and equal angles (60°)*



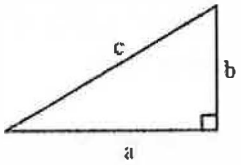
isosceles triangle *two congruent sides (same length)*



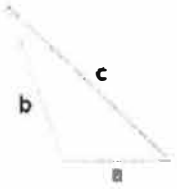
obtuse triangle *an angle greater than 90°*



right triangle *a right (90°) angle*



scalene triangle *no sides equal and no angles equal*



two-dimensional (2-D) *having length and width, but no thickness*

Common 2-D figures include: squares, rectangles, triangles, circles, parallelograms, polygons, trapezoids

vertex *the point of an angle where two rays (sides) intersect*

vertical  *straight up and down*

volume *the amount of space taken up or enclosed by a three-dimensional object, expressed in cubic units*

x- axis *the horizontal axis on a coordinate grid*

x-coordinate *the first number in an ordered pair, the distance from the origin along the x-axis*

x-intercept *the point at which a straight line crosses the x axis of a graph*

y-axis *the vertical axis on a coordinate grid*

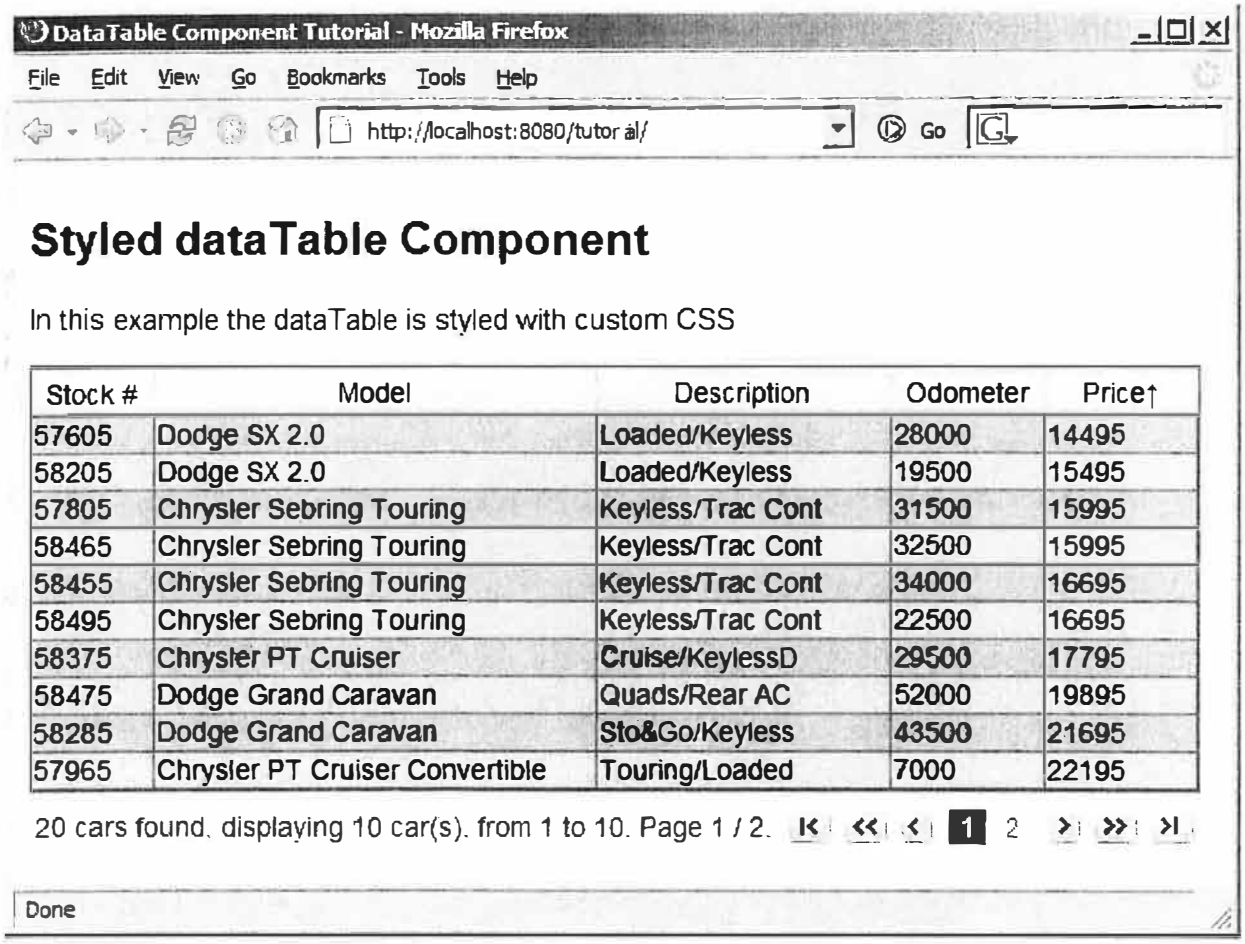
y-coordinate *the second number in an ordered pair, the distance from the origin along the y-axis*

y-intercept *the point at which a straight line crosses the y axis of a graph*

APPENDIX

TABLE

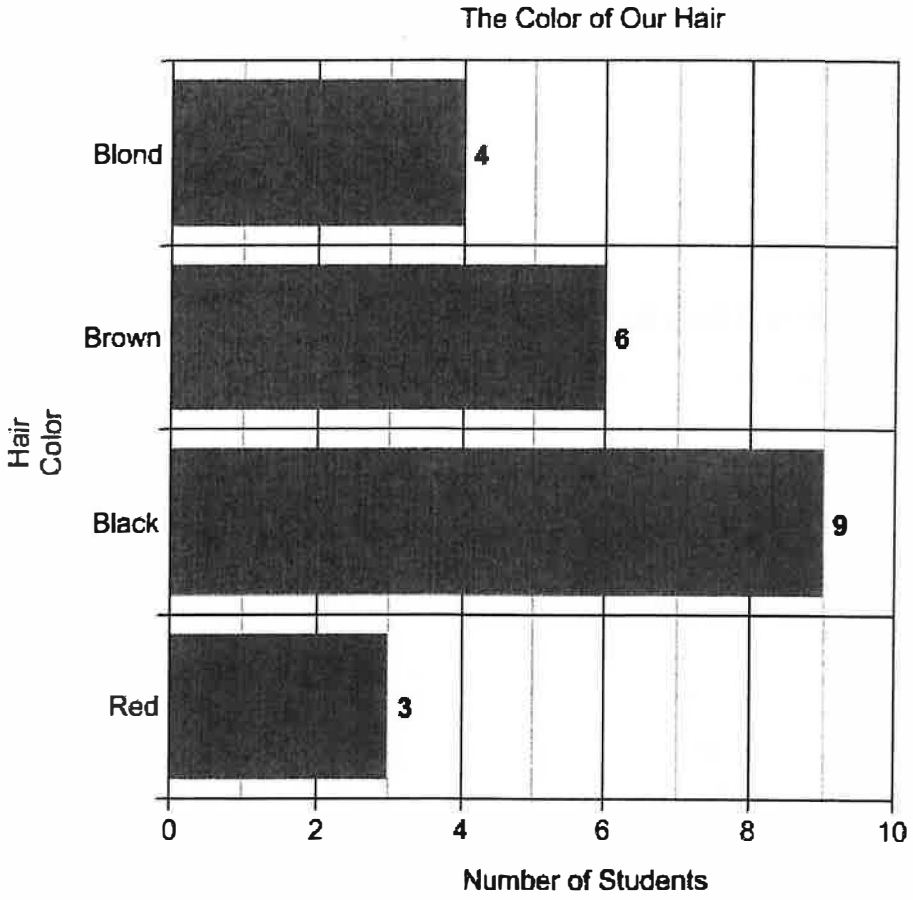
table *a display of data organized in rows and columns*



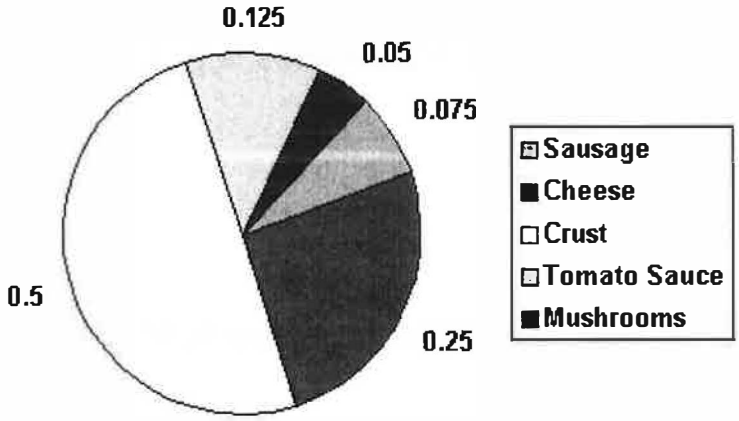
GRAPHS

graphs *diagrams showing the relationship of quantities, e.g. bar graphs, line graphs, circle or pie graphs:*

bar graph *graph that displays data using horizontal or vertical bars to compare numbers*



circle graph *graphs that show a whole amount (100%) divided into parts*



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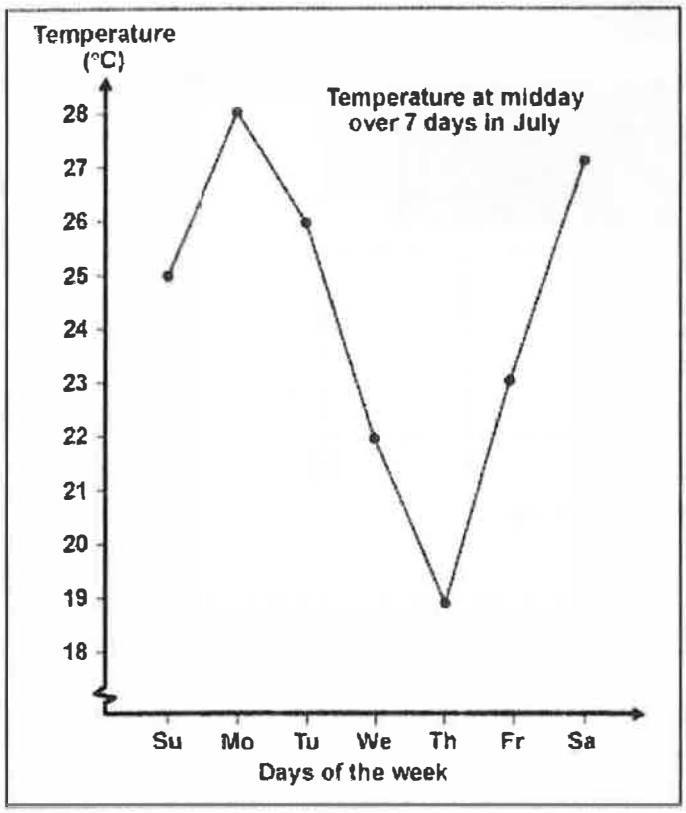
line graph *graph that uses a line to show changes over time*



scatter plot *a graph of paired data in which the data values are plotted as (x,y) points*