

Math Expressions

Glossary

When helping your child with math homework, this glossary will be useful in defining unfamiliar math terms.

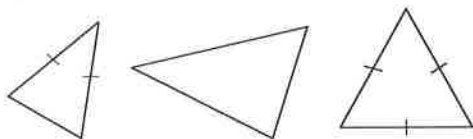
Grade 5

Teacher Glossary

A

acute triangle A triangle with three acute angles.

Examples:



add on Find the difference between two numbers by adding to the lesser number to get the greater number.

Example: Below we find $7\frac{1}{5} - 2\frac{4}{5}$ by adding on from $2\frac{4}{5}$ to $7\frac{1}{5}$.

$$2\frac{4}{5} \begin{matrix} \text{to } 3 \\ \text{to } 7 \\ \text{to } 7\frac{1}{5} \end{matrix}$$

$$\frac{1}{5} + 4 + \frac{1}{5} = 4\frac{2}{5}$$

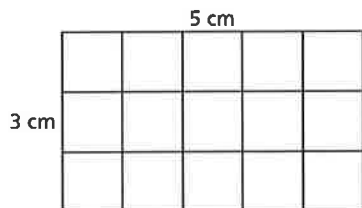
additive comparison A comparison in which one quantity is an amount greater or less than another. An additive comparison can be represented by an addition equation.

Example: Josh has 5 more goldfish than Tia.
 $j = t + 5$

area The number of square units that cover a two-dimensional figure without gaps or overlap.

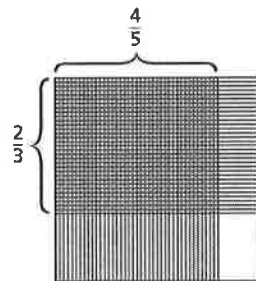
Example:

$$\text{Area} = 3 \text{ cm} \times 5 \text{ cm} = 15 \text{ sq. cm}$$



area model for multiplication A model that represents the two factors of a multiplication problem as the side lengths of a rectangle and the product as the area.

Example: Below is the area model for $\frac{2}{3} \cdot \frac{4}{5}$.



$$\frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15}$$

Associative Property of Addition

Changing the grouping of addends does not change the sum. In symbols, $(a + b) + c = a + (b + c)$ for any numbers a , b , and c .

Example:

$$(4.7 + 2.6) + 1.4 = 4.7 + (2.6 + 1.4)$$

Associative Property of Multiplication

Changing the grouping of factors does not change the product. In symbols, $(a \cdot b) \cdot c = a \cdot (b \cdot c)$ for any numbers a , b , and c .

Example:

$$(0.73 \cdot 0.2) \cdot 5 = 0.73 \cdot (0.2 \cdot 5)$$

B

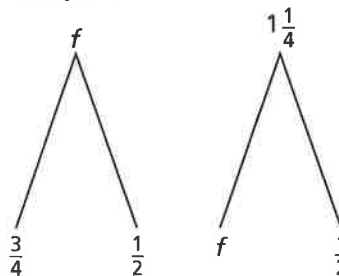
base In a power, the number that is used as a repeated factor.

Example: In the power 10^3 , the base is 10.

benchmark A point of reference used for comparing and estimating. The numbers 0 , $\frac{1}{2}$, and 1 are common fraction benchmarks.

break-apart drawing A drawing that shows the relationship between addition and subtraction.

Examples:



cubic unit The volume of a unit cube. A cubic unit is a unit for measuring volume.

D

decigram (dg) A unit of mass in the metric system that equals one tenth of a gram.
1 dg = 0.1 g.

deciliter (dL) A unit of capacity in the metric system that equals one tenth of a liter.
1 dL = 0.1 L.

decimal A number that includes a decimal point separating the whole number part of the number from the fraction part of the number.

Examples:

7.3 seven and three tenths
42.081 forty-two and eighty-one thousandths

decimal fraction A fraction with a denominator that is a power of 10 (that is, 10, 100, 1,000, and so on).

Examples: $\frac{3}{10}$, $\frac{73}{100}$, and $\frac{42}{1,000}$

decimeter (dm) A unit of length in the metric system that equals one tenth of a meter.
1 dm = 0.1 m.

dekagram (dag) A unit of mass in the metric system that equals 10 grams.

dekaliter (daL) A unit of capacity in the metric system that equals 10 liters.

dekameter (dak) A unit of length in the metric system that equals 10 meters.

denominator The number below the bar in a fraction. It indicates the number of unit fractions made by dividing the whole into equal parts.

Example: In the fraction $\frac{3}{5}$, the denominator is 5. It represents 5 unit fractions made by dividing the whole into 5 equal parts.

Digit-by-Digit Method A method for solving division problems.

Example:

$$\begin{array}{r} 546 \\ 7 \overline{) 3,822} \\ \underline{-3,5} \\ 32 \\ \underline{-28} \\ 42 \\ \underline{-42} \\ 0 \end{array}$$

Distributive Property of Multiplication Over

Addition Multiplying a number by a sum gives the same result as multiplying the number by each addend and then adding the products. In symbols, for all numbers a , b , and c :

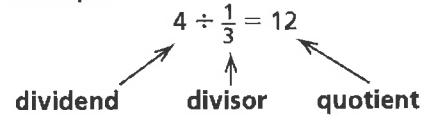
$$a \times (b + c) = a \times b + a \times c$$

Example:

$$4 \times (2 + 0.75) = 4 \times 2 + 4 \times 0.75$$

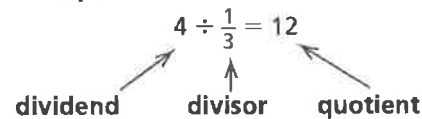
dividend The number that is divided in a division problem.

Example:



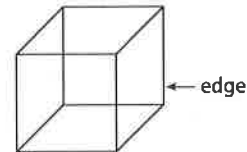
divisor The number you divide by in a division problem.

Example:



E

edge A line segment where two faces of a three-dimensional figure meet.



equation A statement that two expressions are equal.

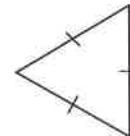
Examples: $3.2 + 3.5 = 6.7$

$$\frac{3}{4} - x = \frac{1}{4}$$

$$45 \cdot m = 180$$

equilateral triangle A triangle with three sides of the same length.

Example:



equivalent decimals Decimals that represent the same value.

Example: 0.07 and 0.070 are equivalent decimals.

frequency table A table that shows how many times each outcome, item, or category occurs.
Example:

Outcome	Number of Students
1	6
2	3
3	5
4	4
5	2
6	5

G

gram (g) The basic unit of mass in the metric system.

greater than (>) A symbol used to show how two numbers compare. The greater number goes before the > symbol and the lesser number goes after.

Example: $\frac{2}{3} > \frac{1}{2}$ Two thirds is greater than one half.

group (verb) Combine tenths to form ones, ones to form tens, tens to form hundreds, and so on.

H

hectogram (hg) A unit of mass in the metric system that equals 100 grams.

hectoliter (hL) A unit of capacity in the metric system that equals 100 liters.

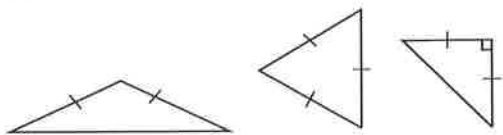
hectometer (hm) A unit of length in the metric system that equals 100 meters.

hundredth A unit fraction representing one of one hundred equal parts of a whole, written as 0.01 or $\frac{1}{100}$.

I

isosceles triangle A triangle with at least two sides of the same length.

Examples:



K

kilogram (kg) A unit of mass in the metric system that equals 1,000 grams.

kiloliter (kL) A unit of capacity in the metric system that equals 1,000 liters.

kilometer (km) A unit of length in the metric system that equals 1,000 meters.

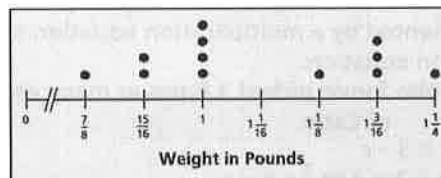
L

leading language Language in a comparison sentence that suggests which operation to use to solve the problem.

less than (<) A symbol used to show how two numbers compare. The lesser number goes before the < symbol and the greater number goes after.

Example: $\frac{1}{4} < \frac{1}{3}$ One fourth is less than one third.

line plot A diagram that uses a number line to show the frequency of data.



liter (L) The basic unit of capacity in the metric system.

M

mass The amount of matter in an object. (Mass is constant; weight varies because it is subject to the effect of gravity on matter.)

meter The basic unit of length in the metric system.

mile (mi) A customary unit of length equal to 5,280 feet or 1,760 yards.

milligram (mg) A unit of mass in the metric system that equals one thousandth of a gram.

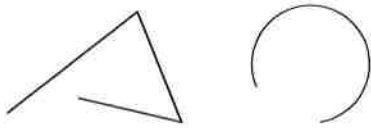
$$1 \text{ mg} = 0.001 \text{ g}$$

milliliter (mL) A unit of capacity in the metric system that equals one thousandth of a liter.

$$1 \text{ mL} = 0.001 \text{ L}$$

open shape A shape that does not start and end at the same point.

Examples:



Order of Operations A rule that states the order in which the operations in an expression should be done:

Step 1 Perform operations inside parentheses.

Step 2 Multiply and divide from left to right.

Step 3 Add and subtract from left to right.

ordered pair A pair of numbers that shows the position of a point on a coordinate plane.

Example: The ordered pair (3, 4) represents a point 3 units to the right of the y -axis and 4 units above the x -axis.

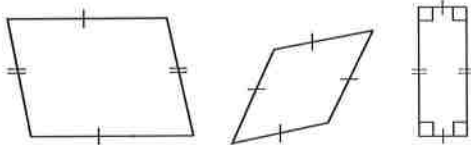
origin The point (0, 0) on the coordinate plane.

overestimate An estimate that is too big.

P

parallelogram A quadrilateral with two pairs of parallel sides.

Examples:



parentheses Grouping symbols that indicate which operations should be done first when simplifying an expression.

partial products In a multidigit multiplication problem, the products obtained by multiplying each place value of one factor by each place value of the other.

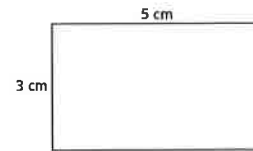
Example: In the problem below, the partial products are in red.

$$25 \cdot 53 = 20 \cdot 50 + 20 \cdot 3 + 5 \cdot 50 + 5 \cdot 3$$

perimeter The distance around a figure.

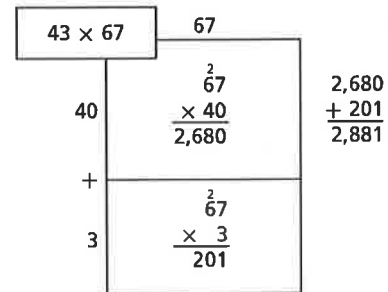
Example:

$$\text{Perimeter} = (2 \cdot 3 \text{ cm}) + (2 \cdot 5 \text{ cm}) = 16 \text{ cm}$$



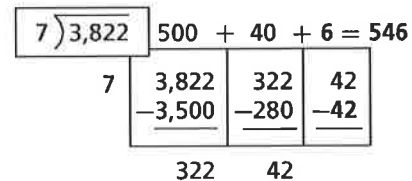
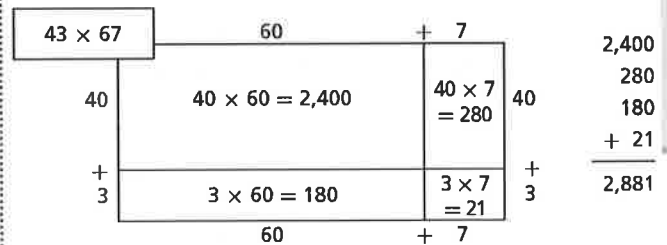
Place Value Rows Method A method used to solve multidigit multiplication problems.

Example:



Place Value Sections Method A method used to solve multidigit multiplication and division problems.

Examples:



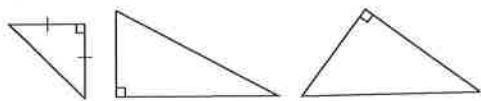
polygon A closed two-dimensional shape made from line segments that do not cross each other.

Examples:



right triangle A triangle with a right angle.

Examples:



round To change a number to a nearby number.

Examples:

54.72 rounded to the nearest ten is 50.

54.72 rounded to the nearest one is 55.

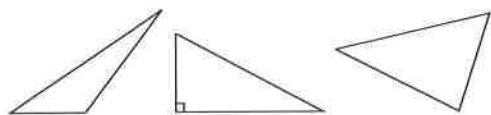
54.72 rounded to the nearest tenth is 54.7.

$3\frac{7}{9}$ rounded to the nearest whole number is 4.

S

scalene triangle A triangle with no sides of the same length.

Examples:



scaling Resizing by using multiplication. Multiplying n by a number less than 1 gives a product less than n . Multiplying n by a number greater than 1 gives a number greater than n .

shift To change position. When we multiply a decimal or whole number by 10, 100, or 1,000, the digits shift to the left. When we divide by 10, 100, or 1,000, the digits shift to the right. When we multiply by 0.1, 0.01, or 0.001, the digits shift to the right. When we divide by 0.1, 0.01, or 0.001, the digits shift to the left.

Examples:

$72.4 \times 100 = 7,240$ Digits shift left 2 places.

$5.04 \div 10 = 0.504$ Digits shift right 1 place.

$729 \times 0.01 = 7.29$ Digits shift right 2 places.

$0.26 \div 0.001 = 260$ Digits shift left 3 places.

Short Cut Method A method used to solve multidigit multiplication problems.

Example:

$$\begin{array}{r} 1 \\ 2 \\ 43 \\ \times 67 \\ \hline 301 \\ 2,580 \\ \hline 2,881 \end{array}$$

simplify a fraction Make an equivalent fraction by dividing the numerator and denominator of a fraction by the same number. Simplifying makes fewer but larger parts.

Example: Simplify $\frac{12}{16}$ by dividing the numerator and denominator by 4.

$$\frac{12 \div 4}{16 \div 4} = \frac{3}{4}$$

simplify an expression Use the Order of Operations to find the value of the expression.

Example: Simplify $6 \cdot (2 + 5) \div 3$.

$$\begin{aligned} 6 \cdot (2 + 5) \div 3 &= 6 \cdot 7 \div 3 \\ &= 42 \div 3 \\ &= 14 \end{aligned}$$

Simplify and Multiply Method A method of multiplying fractions that involves first simplifying and then multiplying.

Example:

$$\frac{1}{2} \cdot \frac{3}{10} = \frac{3}{20}$$

situation equation An equation that shows the action or the relationship in a word problem.

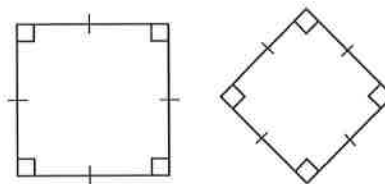
Example: Liam has some change in his pocket. He spends 25¢. Now he has 36¢ in his pocket. How much change did he have to start?
situation equation: $x - 25 = 36$

solution equation An equation that shows the operation to perform in order to solve a word problem.

Example: Liam has some change in his pocket. He spends 25¢. Now he has 36¢ in his pocket. How much change did he have to start?
solution equation: $x = 36 + 25$

square A rectangle with four congruent sides. (Or, a rhombus with four right angles.)

Examples:



square centimeter A square with side lengths of 1 centimeter.

square unit A square with side lengths of 1 unit.

X

x-axis The horizontal axis of the coordinate plane.

x-coordinate The first number in an ordered pair, which represents a point's horizontal distance from the *y*-axis.

Example: The *x*-coordinate of the point represented by the ordered pair (3, 4) is 3.

Y

y-axis The vertical axis of the coordinate plane.

y-coordinate The second number in an ordered pair, which represents a point's vertical distance from the *x*-axis.

Example: The *y*-coordinate of the point represented by the ordered pair (3, 4) is 4.