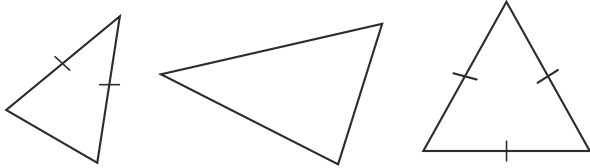# Glossary

acute triangle A triangle with three acute angles.

Examples:

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.
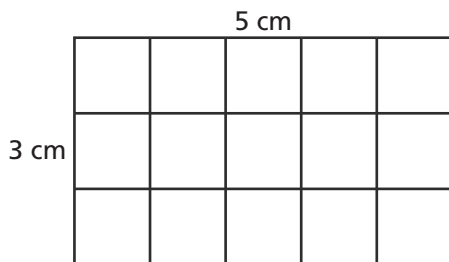
Example: Josh has 5 more goldfish than Tia.

$$j = t + 5$$

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

Example:

Area = 3 cm × 5 cm = 15 sq. cm

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.

C

centimeter (cm) A unit of length in the metric system that equals one hundredth of a meter. 1 cm = 0.01 m.

closed shape A shape that starts and ends at the same point.

Examples:

common denominator A common multiple of two or more denominators.

Example: 18 is a common denominator of $\frac{2}{3}$ and $\frac{5}{6}$.

$\frac{2}{3} = \frac{12}{18}$ and $\frac{5}{6} = \frac{15}{18}$

Commutative Property of Addition Changing the order of addends does not change the sum. In symbols, $a + b = b + a$ for any numbers a and b.

Example: $\frac{3}{5} + \frac{4}{9} = \frac{4}{9} + \frac{3}{5}$

**Commutative Property of Multiplication** Changing the order of factors does not change the product. In symbols, $a \cdot b = b \cdot a$ for any numbers a and b.

Example: $\frac{3}{7} \cdot \frac{4}{5} = \frac{4}{5} \cdot \frac{3}{7}$

comparison A statement, model, or drawing that shows the relationship between two quantities.

comparison bars Bars that represent the greater amount and the lesser amount in a comparison situation.

Example: Sarah made 2 quarts of soup. Ryan made 6 quarts. These comparison bars show that Ryan made 3 times as many quarts as Sarah.
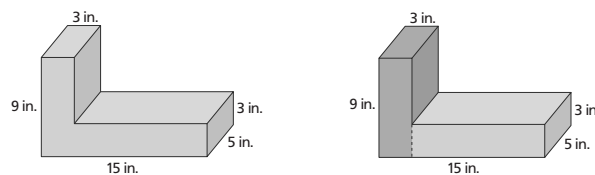
Ryan (r)

| 2 | 2 | 2 | 6 |

Sarah (s)

| 2 |
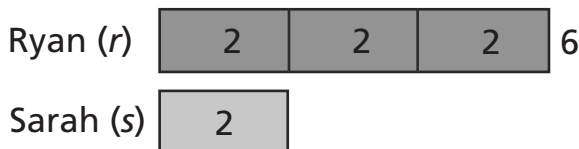
composite number A whole number that has more than two factors.

Example: The whole number 12 is a composite number because 1, 2, 3, 4, 6, and 12 are factors of 12.

composite solid A solid figure made by combining two or more basic solid figures.
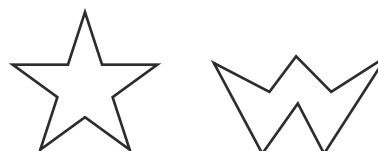
Example: The composite solid on the left below is composed of two rectangular prisms, as shown on the right.

concave polygon A polygon for which you can connect two points inside the polygon with a segment that passes outside the polygon. A concave polygon has a "dent."
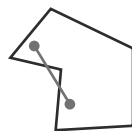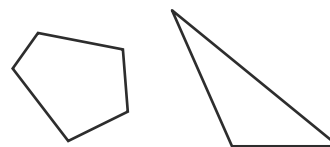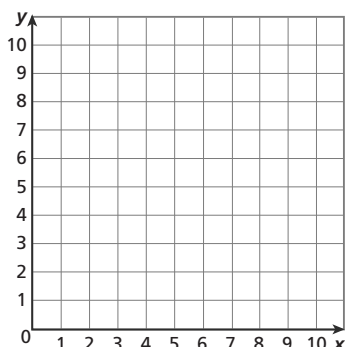

Examples:

convex polygon A polygon that is not concave. All the inside angles of a convex polygon have a measure less than 180°.

Examples:

coordinate plane A system of coordinates formed by the perpendicular intersection of horizontal and vertical number lines.

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

D

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

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

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

Example:

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

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:

$$4 \div \frac{1}{3} = 12$$

dividend   divisor   quotient

divisor The number you divide by in a division problem.

Example:

$$4 \div \frac{1}{3} = 12$$

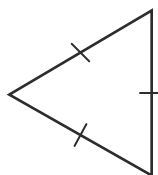dividend   divisor   quotient

E

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

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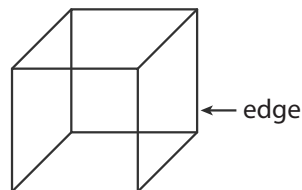
equilateral triangle A triangle with three sides of the same length.

Example:

equivalent decimals Decimals that represent the same value.

Example: 0.07 and 0.070 are equivalent decimals.

equivalent fractions Fractions that represent the same value.

Example: $\frac{1}{2}$ and $\frac{3}{6}$ are equivalent fractions.

estimate Find *about* how many or *about* how much, often by using rounding or benchmarks.

evaluate To substitute values for the variables in an expression and then simplify the resulting expression.

Example:

Evaluate $7 + 5 \cdot n$ for $n = 2$.

$7 + 5 \cdot n = 7 + 5 \cdot 2$ Substitute 2 for n.

$= 7 + 10$ Multiply.

$= 17$ Add

expanded form A way of writing a number that shows the value of each of its digits.

Example: The expanded form of 35.026 is $30 + 5 + 0.02 + 0.006$.

expanded form (powers of 10) A way of writing a number that shows the value of each of its digits using powers of 10.

Example: The expanded form of 35.026 using powers of 10 is

$(3 \times 10) + (5 \times 1) + (2 \times 0.01) + (6 + 0.001)$

Expanded Notation Method A method for solving multidigit multiplication and division problems.

Examples:

$$\begin{array}{r} 43 \\ \times\ 67 \\ \hline 2{,}400 \\ 280 \\ 180 \\ 21 \\ \hline 2{,}881 \end{array}$$

$$\begin{array}{r} 6 \\ 40 \\ 500 \end{array}\Big) 546$$

$$\begin{array}{r} 7)\overline{3{,}822} \\ -3{,}500 \\ \hline 322 \\ -280 \\ \hline 42 \\ -42 \end{array}$$

exponent In a power, the number that tells how many times the base is used as a factor.

Example: In the power 10^3, the exponent is 3.
$10^3 = 10 \times 10 \times 10$

exponential form The representation of a number that uses a base and an exponent.

Example: The exponential form of 100 is 10^2.

expression A combination of one or more numbers, variables, or numbers and variables, with one or more operations.
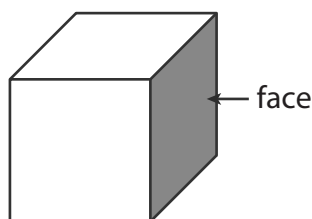
Examples: 4

t

$6 \cdot n$

$4 \div p + 5$

$5 \times 4 + 3 \times 7$

$6 \cdot (x + 2)$

F

face A flat surface of a three-dimensional figure.

← face

factor One of two or more numbers multiplied to get a product.

Example:

$$\frac{3}{5} \cdot 10 = 6$$

factor   factor   product

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

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

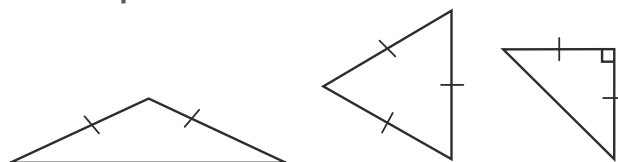Example: $\frac{2}{3} > \frac{1}{2}$ Two thirds is greater than one half.

H

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:

L

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.

Weight in Pounds

M

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.

millimeter (mm) A unit of length in the metric system that equals one thousandth of a meter. 1 mm = 0.001 m.

mixed number A number with a whole number part and a fraction part.

Example: The mixed number $3\frac{2}{5}$ means $3 + \frac{2}{5}$.

multiplier The number the numerator and denominator of a fraction are multiplied by to get an equivalent fraction.

Example: A multiplier of 5 changes $\frac{2}{3}$ to $\frac{10}{15}$.

multiplicative comparison A comparison in which one quantity is a number of times the size of another. A multiplicative comparison can be represented by a multiplication equation or a division equation.

Example: Tomás picked 3 times as many apples as Catie.

$$t = 3 \cdot c$$
$$t \div 3 = c \text{ or } \frac{1}{3} \cdot t = c$$

N

New Groups Below Method A method used to solve multidigit multiplication problems.

Example:

$$
\begin{array}{r}
67 \\
\times\ 43 \\
\hline
{}^{1\,2} \\
81 \\
{}^{2\ 2} \\
480 \\
{}^{1} \\
\hline
2{,}881
\end{array}
$$

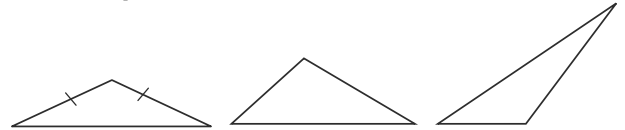**numerical pattern** A sequence of numbers that share a relationship.

Example: In this numerical pattern, each term is 3 more than the term before.
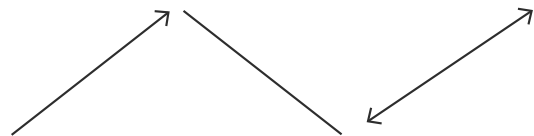
2, 5, 8, 11, 14, . . .

O

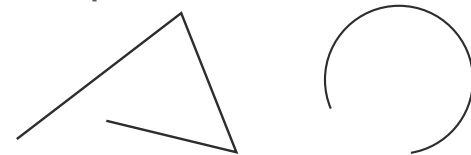**obtuse triangle** A triangle with an obtuse angle.

Examples:

one-dimensional figure A figure with only one dimension, usually length.

Examples:

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.
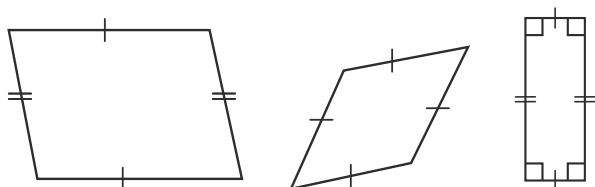
Glossary (continued)

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:

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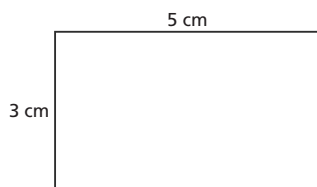
Example: In the problem below, the partial products are in red.

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

perimeter The distance around a figure.

Example:

Perimeter $= 2 \cdot 3$ cm $+ 2 \cdot 5$ cm $= 16$ 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:
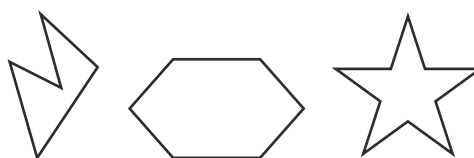
**power of 10** A power with a base of 10. A number in the form 10^n.

Examples: 10^1, 10^2, 10^3

prime number A whole number that has exactly two factors—the number itself and 1.

Examples: The whole number 13 is a prime number because the only factors of 13 are 1 and 13. The whole number 1 is neither prime nor composite.
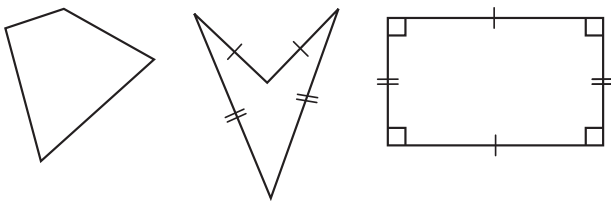
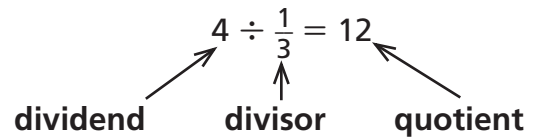**product** The result of a multiplication.

Example:

$$\frac{3}{5} \cdot 10 = 6$$

factor   factor   product
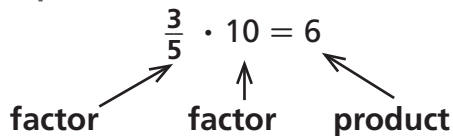
Q

quadrilateral A closed two-dimensional shape with four straight sides.

Examples:

quotient The answer to a division problem.

Example:

$$4 \div \frac{1}{3} = 12$$

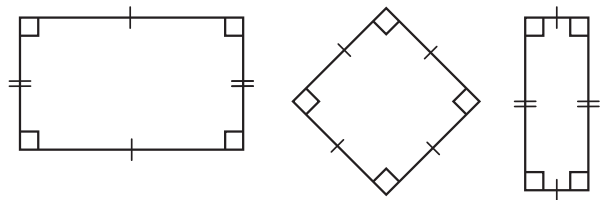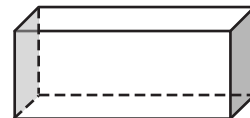dividend   divisor   quotient

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R

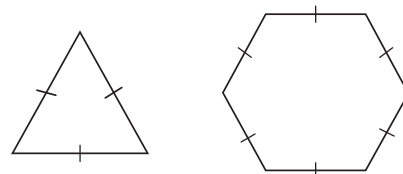**rectangle** A parallelogram with four right angles.

Examples:

rectangular prism A solid figure with two rectangular bases that are congruent and parallel.

Example:

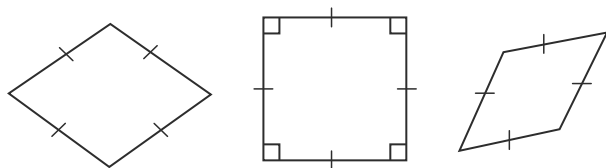**regular polygon** A polygon in which all sides and all angles are congruent.

Examples:

remainder The number left over when a divisor does not divide evenly into a dividend.

Example:

$$
\begin{array}{r}
13 \\
7\overline{)94} \\
-7 \\
\hline
24 \\
21 \\
\hline
3 \leftarrow \text{remainder}
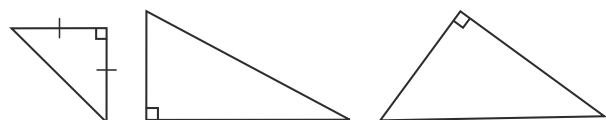\end{array}
$$

rhombus A parallelogram with four congruent sides.

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.
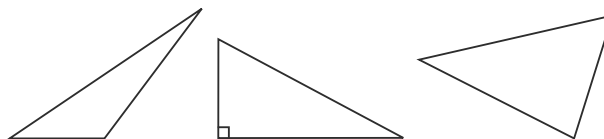
54.72 rounded to the nearest one is 55.

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:

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:

$$
\begin{array}{r}
\overset{1}{}\overset{2}{} \\
\overset{}{4}3 \\
\times\ 67 \\
\hline
301 \\
2{,}580 \\
\hline
2{,}881
\end{array}
$$

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

$$6 \cdot (2 + 5) \div 3 \quad = 6 \cdot 7 \div 3$$
$$= 42 \div 3$$
$$= 14$$

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.
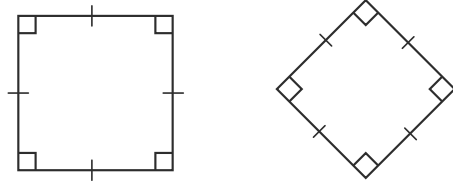
Example:

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:

standard form The form of a number using digits, in which the place of each digit indicates its value.

Example: 407.65

T

tenth A unit fraction representing one of ten equal parts of a whole, written as 0.1 or $\frac{1}{10}$.

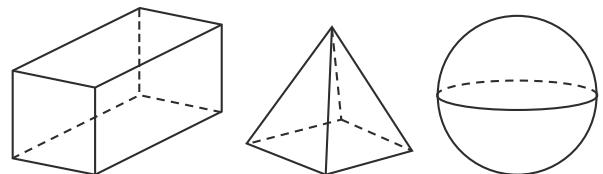**term** Each number in a numerical pattern.

Example: In the pattern below, 3 is the first term, and 9 is the fourth term.

3, 5, 7, 9, 11, . . .

thousandth A unit fraction representing one of one thousand equal parts of a whole, written as 0.001 or $\frac{1}{1,000}$.

three-dimensional figure A figure with three dimensions, usually length, width, and height.
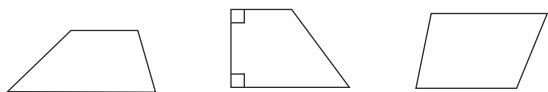
Examples:

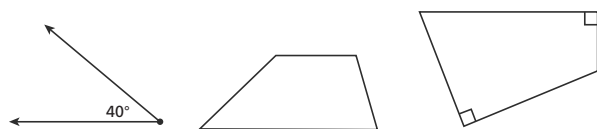**ton (T)** A customary unit of weight that equals 2,000 pounds.

trapezoid A quadrilateral with exactly one pair of parallel sides.

Examples:

two-dimensional figure A figure with two dimensions, usually length and width.
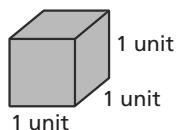
Examples:

40°

U

underestimate An estimate that is too small.

unit cube A cube with sides lengths of 1 unit.

1 unit
1 unit
1 unit

unit fraction A fraction with a numerator of 1. A unit fraction is one equal part of a whole.

Examples: $\frac{1}{3}$ and $\frac{1}{12}$

unsimplify Make an equivalent fraction by multiplying the numerator and denominator of a fraction by the same number. Unsimplifying makes more but smaller parts.

Example: Unsimplify $\frac{3}{4}$ by multiplying the numerator and denominator by 2.

$$\frac{3 \times 2}{4 \times 2} = \frac{6}{8}$$

V

variable A letter or other symbol used to stand for an unknown number in an algebraic expression.

volume A measure of the amount of space occupied by a solid figure. Volume is measured in cubic units.

W

word form The form of a number that uses words instead of digits.

Example: twelve and thirty-two hundredths

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.