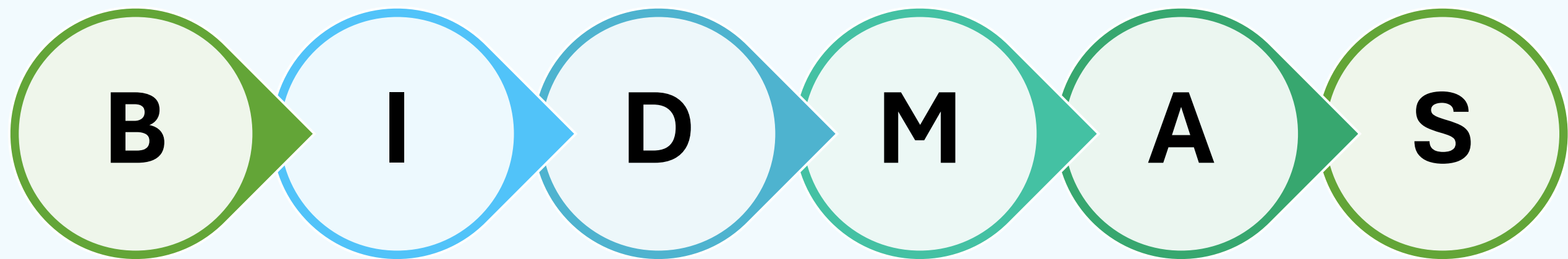
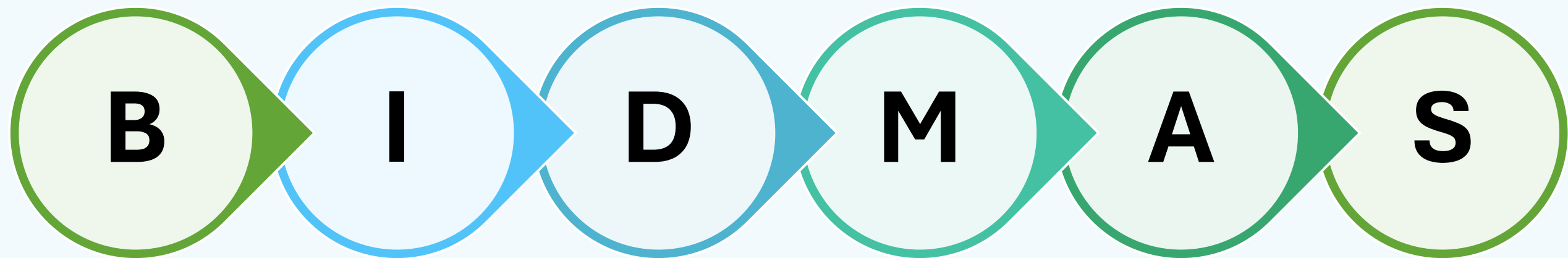


Numeracy Skills





Brackets

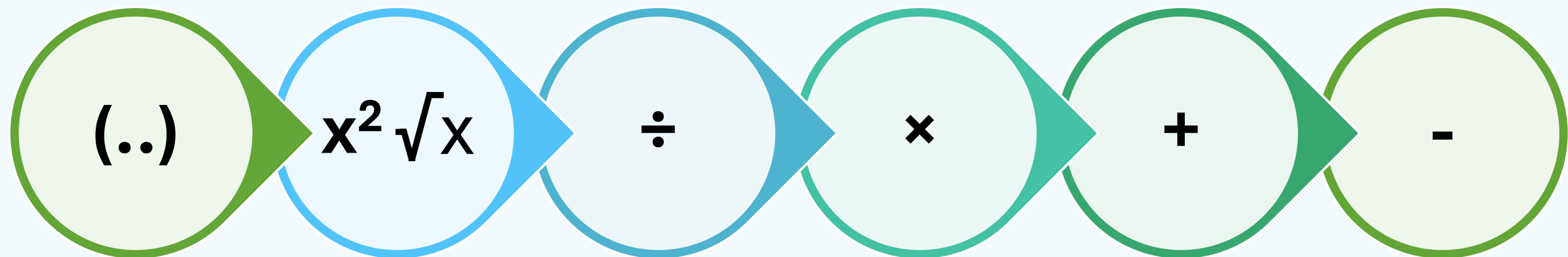
Indices

Division

Multiplication

Addition

Subtraction



Algebra



Algebra

- One of the major differences between arithmetic and algebra is the use of variables.
- A variable is a letter (or symbol) that stands for a number

Algebra

Solve for $x=2$, $y=5$

$$2x + 6y$$

$$2 \times 2 + 6 \times 5$$

$$4 + 30 = 34$$

- To evaluate an algebraic expression, simply substitute the given numbers for each variable and perform the necessary calculations in the proper order.

Algebra

Rearrange for x

$$y = 4x - 7$$

$$y + 7 = 4x$$

$$x = \frac{y+7}{4}$$

- To rearrange an algebraic equation, use inverse operations to isolate the desired variable, performing each step carefully while keeping the equation balanced on both sides

Algebra

Simplify the expression:

$$3(2x + 5)$$

$$3 \times 2x + 3 \times 5$$

$$6x + 15$$

- Simplifying an algebraic expression is usually done by replacing one algebraic expression with another that is equivalent and simpler in form.

Algebra

- Solve the linear equation:

$$3x + 9 = x - 7$$

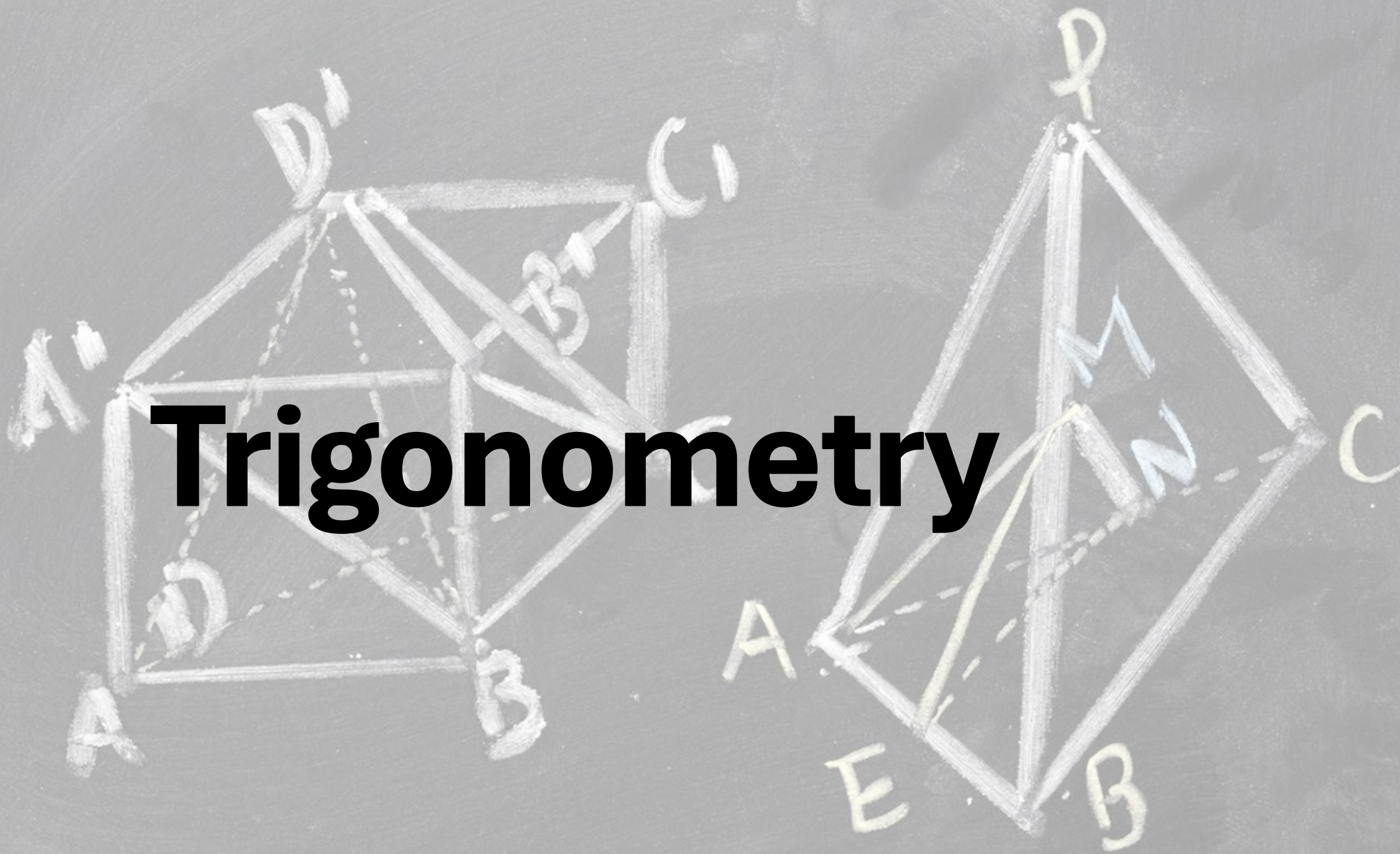
$$3x - x = -7 - 9$$

$$2x = -16$$

$$x = \frac{-16}{2} = -8$$

- Linear equations are the simplest of equations and only have a single solution.

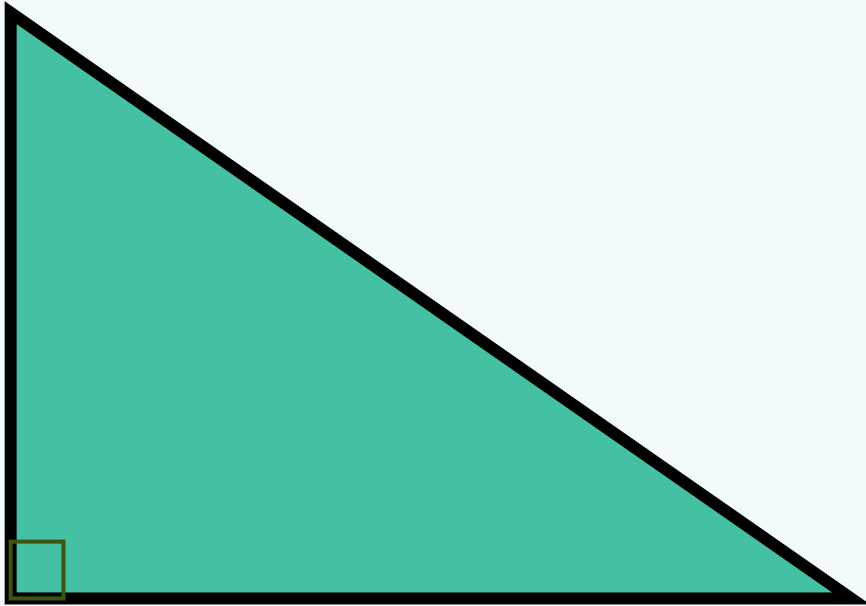
Trigonometry



Trigonometry

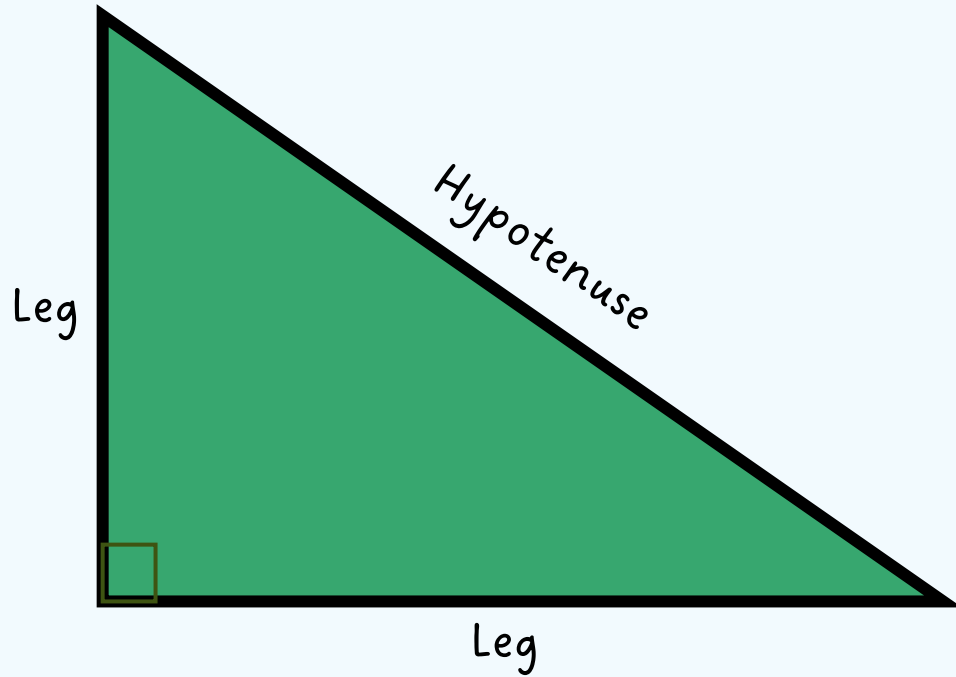
- This is the branch of mathematics that deals with triangles, and the relationships between the sides and angles.

Trigonometry



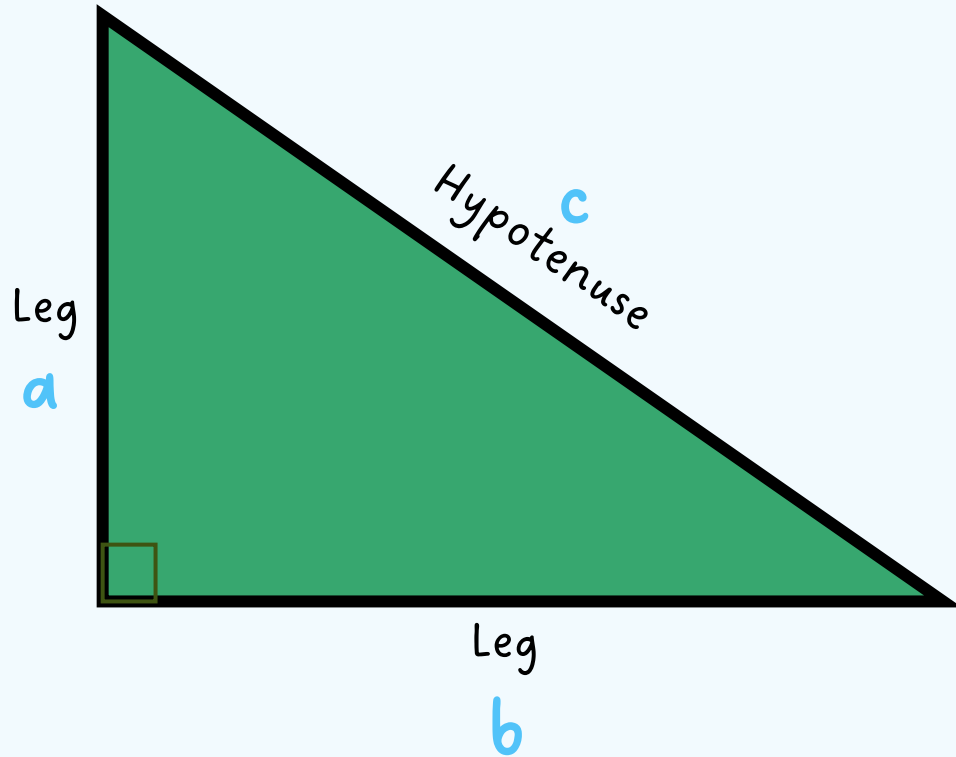
- This is the branch of mathematics that deals with triangles, and the relationships between the sides and angles.
- The simplest triangle is one containing a 90° angle, called a 'right angled triangle'.

Pythagorean Theorem



- In a right-angle triangle, the sum of the squares of the lengths of the two legs is equal to the square of the length of the hypotenuse.

Pythagorean Theorem

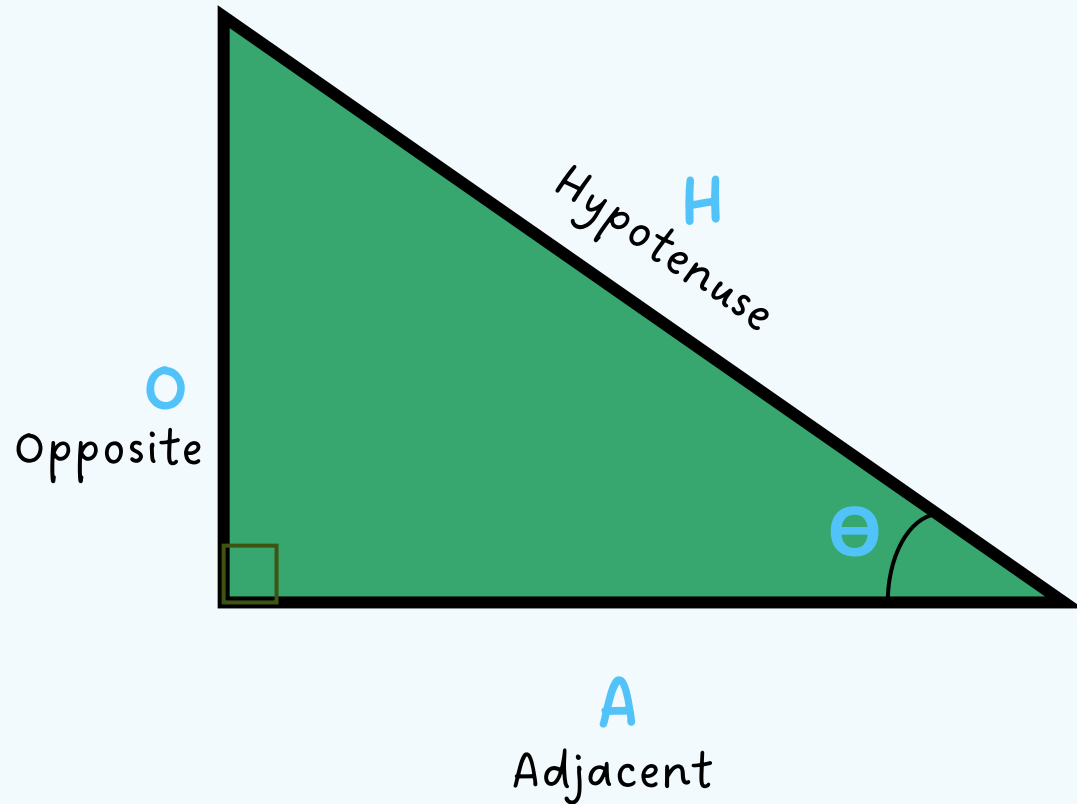


- In a right-angle triangle, the sum of the squares of the lengths of the two legs is equal to the square of the length of the hypotenuse.

$$a^2 + b^2 = c^2$$

Trigonometry

- SOHCAHTOA

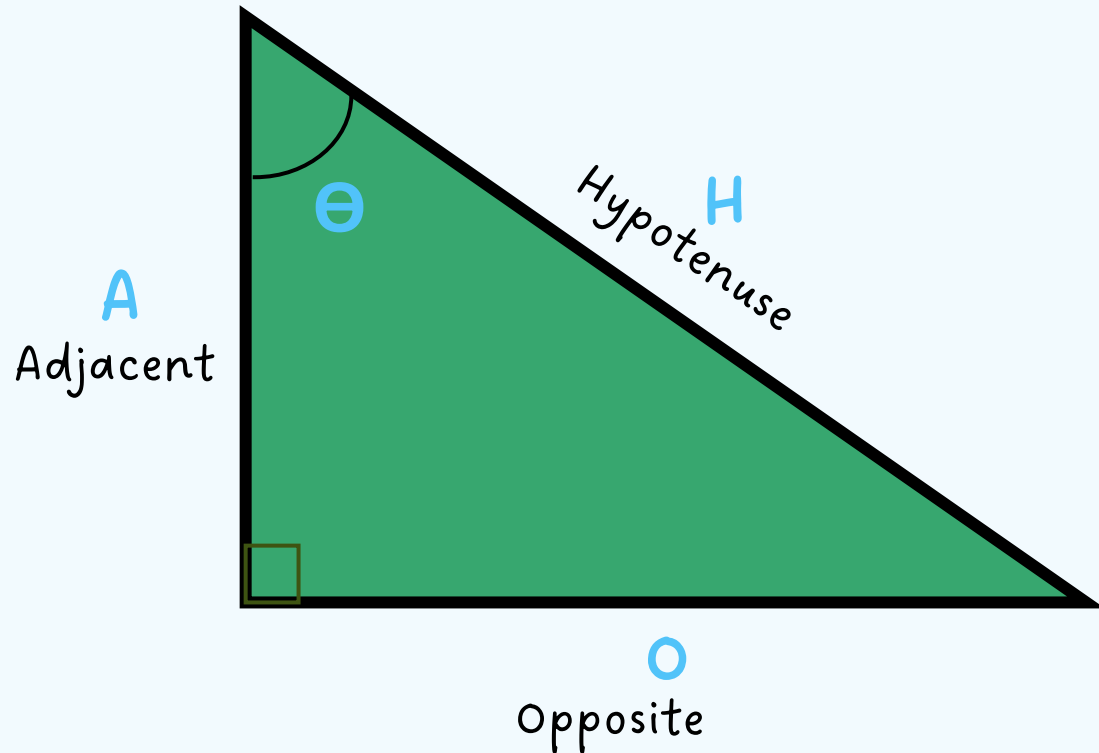


$$\sin \theta = \frac{\textit{Opposite}}{\textit{Hypotenuse}}$$

$$\cos \theta = \frac{\textit{Adjacent}}{\textit{Hypotenuse}}$$

$$\tan \theta = \frac{\textit{Opposite}}{\textit{Adjacent}}$$

Trigonometry



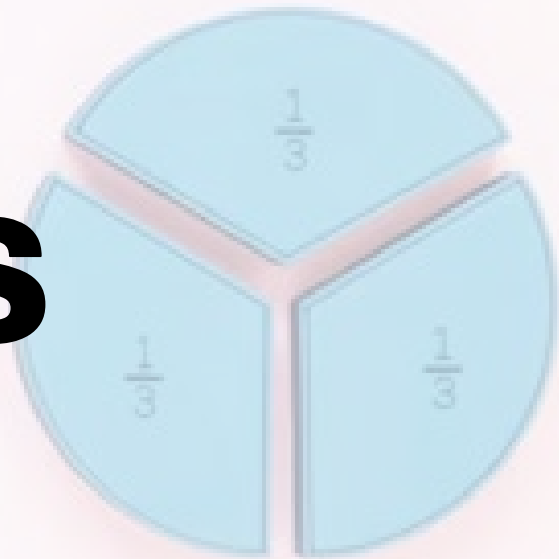
- SOHCAHTOA

$$\sin \theta = \frac{\textit{Opposite}}{\textit{Hypotenuse}}$$

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$$\tan \theta = \frac{\textit{Opposite}}{\textit{Adjacent}}$$

Fractions



Fractions

$$\frac{\textit{Numerator}}{\textit{Denominator}}$$

Fractions represent parts of a whole, written as one number (the numerator) over another (the denominator).

The numerator shows how many parts are taken, while the denominator shows the total parts.

Fractions

$$\frac{5}{9} + \frac{1}{7}$$

$$\frac{5 \times 7}{9 \times 7} + \frac{1 \times 9}{7 \times 9}$$

$$\frac{35}{63} + \frac{9}{63} = \frac{44}{63}$$

There are 4 rules of fractions.

Rule 1: Addition

We need the denominators to be the same value.

Fractions

$$\frac{2}{7} \times \frac{4}{5}$$

$$\frac{2 \times 4}{7 \times 5} = \frac{8}{35}$$

There are 4 rules of fractions.

Rule 2: Multiplication

We can multiply the numerators and denominators.

Fractions

$$\frac{7}{3} \div \frac{9}{7}$$

$$\frac{7}{3} \times \frac{7}{9}$$

$$\frac{7 \times 7}{3 \times 9} = \frac{49}{27}$$

There are 4 rules of fractions.

Rule 3: Division

We can take the reciprocal of the second fraction and then multiply.

Fractions

$$\frac{4}{5} - \frac{1}{3}$$

$$\frac{4 \times 3}{5 \times 3} - \frac{1 \times 5}{3 \times 5}$$

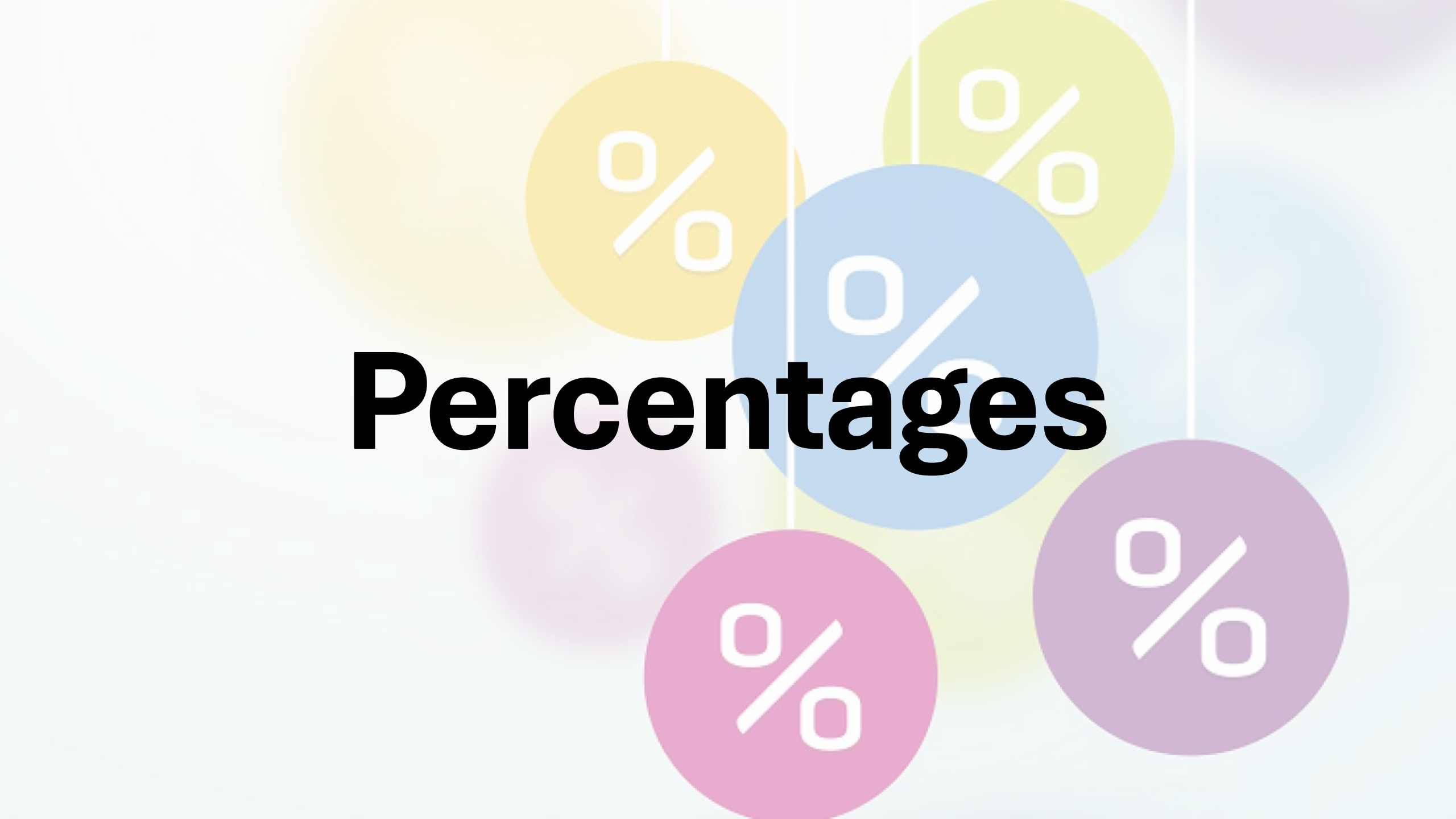
$$\frac{12}{15} - \frac{5}{15} = \frac{7}{15}$$

There are 4 rules of fractions.

Rule 4: Subtraction

Like Addition, we need the denominators to be the same value.

Percentages



Percentages

$$\% = \frac{\textit{Part}}{\textit{Whole}} \times 100$$

A percentage is a way of expressing a number as a fraction of 100.

It shows how many parts out of 100 something represents.