

**FOR THE STUDENT:** The **QUICK-MATHS® Handbook for Everyday Mathematicians, Intermediate**, contains mathematical terms and definitions in alphabetical order. Key ideas and examples go along with each term. There is also space to write notes. At the end of the handbook is a list of symbols, abbreviations and measurement tools.

This handbook was prepared for students by Christopher Forest.

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# ADDITION

**ADDITION**—combining numbers to make a total.

## ADDITION PROBLEMS

Here are two ways to show an addition problem.

$$34 + 15 = 49 \quad \begin{array}{r} 34 \\ + 15 \\ \hline 49 \end{array}$$

These are the parts of an addition problem.

$$\begin{array}{r} 34 \leftarrow \text{addend} \\ + 15 \leftarrow \text{addend} \\ \hline 49 \leftarrow \text{sum} \end{array}$$

plus sign  $\rightarrow$

## ADDING

First add the numbers in the ones column. In this problem, the numbers in the ones column are 5 and 4;  $5 + 4 = 9$ . Place the 9 in the ones column of the answer.

$$\begin{array}{r} 34 \\ + 15 \\ \hline 9 \end{array}$$

Then add the numbers in the tens column ( $1 + 3 = 4$ ). Place the 4 in the tens column of the answer.

$$\begin{array}{r} 34 \\ + 15 \\ \hline 49 \end{array}$$

## REGROUPING

In some addition problems, you might find that you have a sum with two digits in one of the columns. When this happens, you have to regroup. In the following problem, you get 12 ones when you add  $5 + 7$ . Regroup 12 as 1 ten and 2 ones. Write the 2 in the ones column. Add the 1 ten to the tens column. Continue adding to get a sum of 372.

$$\begin{array}{r} 1 \\ 3 \mid 1 \mid 7 \\ + 5 \mid 5 \\ \hline 3 \mid 7 \mid 2 \end{array}$$

(continues)

**My Own Notes**

**ALGEBRA**—a type of maths that may use unknowns (variables) as a way to solve a problem.

## ALGEBRA PROBLEMS

You have probably solved a maths problem like the one below.

$$13 + \square = 24$$

The number that is missing is 11.

$$13 + 11 = 24$$

Algebra can be used to solve a problem like this.

## VARIABLES

You can use algebra to find a missing number. Usually, a letter is used to represent, or stand for, the missing number in the number sentence. This letter is called a variable.

## EQUATIONS

One type of algebra number sentence, which contains an equals sign (=), is called an equation. Look at the two equations below. What are the variables?

$$3 + y = 7$$
$$16 - z = 4$$

The letters  $y$  and  $z$  are variables in these equations.

## MULTIPLYING IN ALGEBRA

When you multiply with variables, the symbol  $\times$  is usually not used to show the multiplication. Instead, the number and the variable are combined. The number sentences  $5 \times a = 15$  and  $18 \times n = 72$  would usually be written as follows.

$$5a = 15$$
$$18n = 72$$

## DIVIDING IN ALGEBRA

When you divide with variables, the symbol  $\div$  is usually not used to show the division. The number sentences  $15 \div a = 5$  and  $72 \div n = 18$  would usually be written as follows.

$$\frac{15}{a} = 5$$

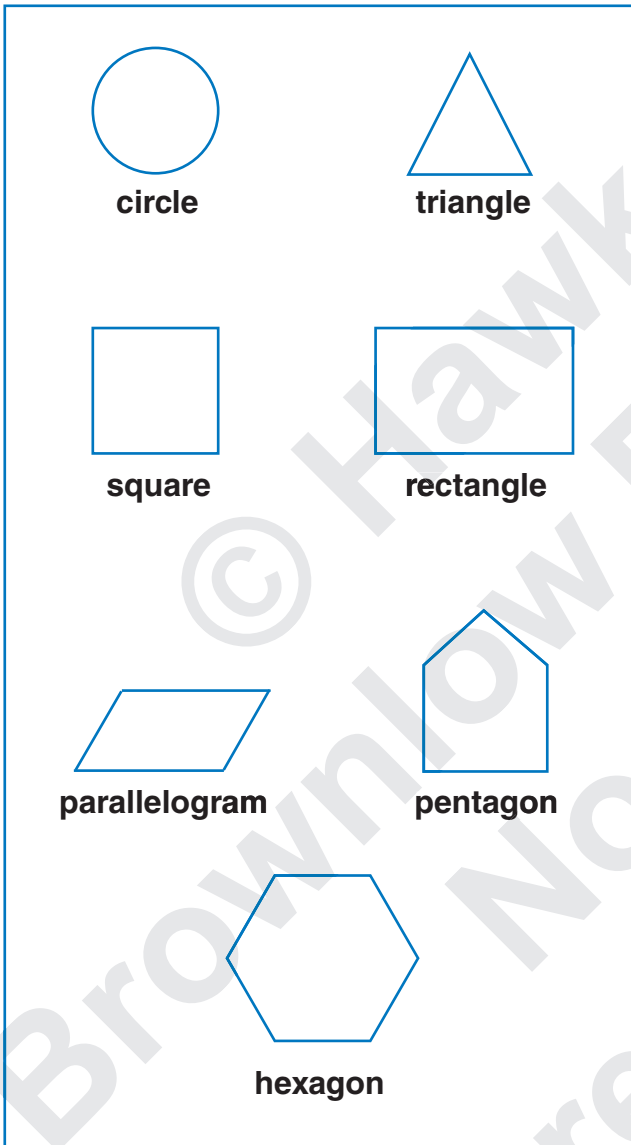
$$\frac{72}{n} = 18$$

# PLANE FIGURES

**PLANE FIGURE**—any shape that has no depth.

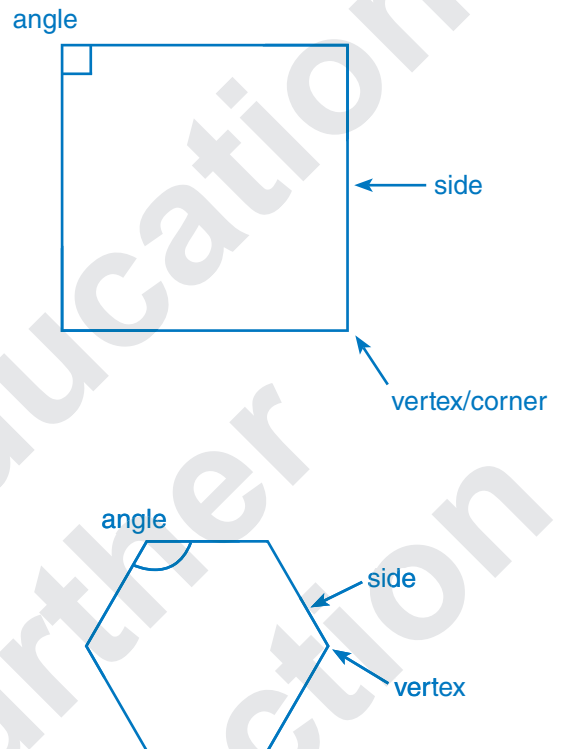
## EXAMPLES OF PLANE FIGURES

Plane figures are flat shapes, which don't have depth. The following are some common plane figures.



## FEATURES OF PLANE FIGURES

Most plane figures have these features.



*My Own Notes*

# TEMPERATURE

**TEMPERATURE**—a measurement scale for hotness or coldness.

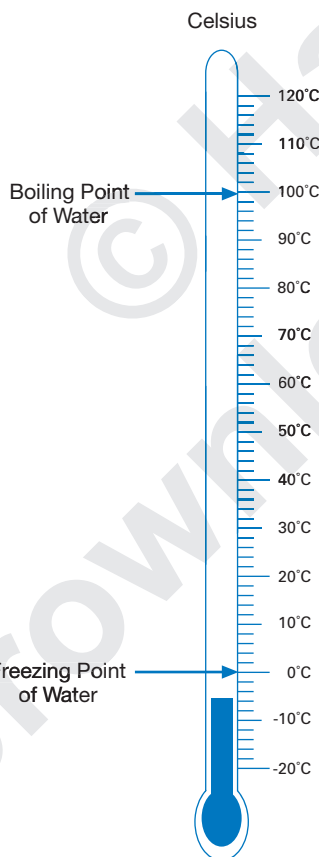
## MEASURING TEMPERATURE

Temperature is measured with a thermometer. Below are two types of thermometers—one for the Celsius scale and one for the Fahrenheit scale. Both measure in units called degrees.

The symbol for “degree” is  $^{\circ}$ . To read a thermometer, look at the number where the colour in the thermometer stops. This tells the temperature in degrees.

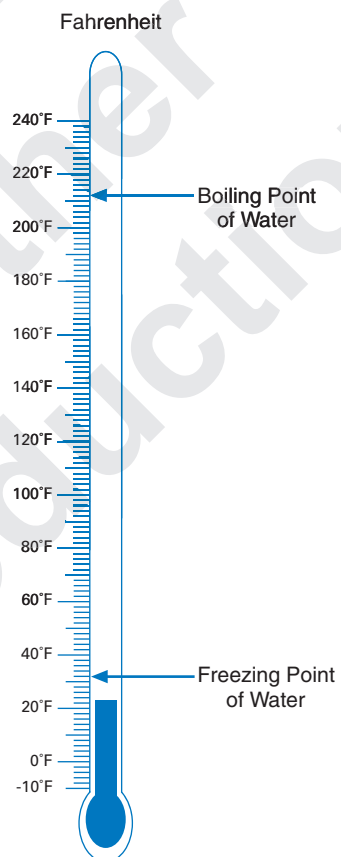
### Celsius

The standard scale used to measure temperature is the Celsius scale. This scale uses  $0^{\circ}$  as the freezing point of water and  $100^{\circ}$  as the boiling point of water.



### Fahrenheit

One scale used to measure temperature is the Fahrenheit scale. This scale uses  $32^{\circ}$  as the freezing point of water and  $212^{\circ}$  as the boiling point of water.



*My Own Notes*