

PSLE Maths Cheat Sheet

The formulas and key facts to know by heart for the PSLE, from the latest (2026) MOE syllabus

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● Number & Algebra	p. 1
● Measurement & Geometry	p. 6
● Statistics	p. 10
● Problem sums	p. 11

On the paper

- No formula list is given in the exam: know these by heart.
- Paper 1: no calculator.
- Paper 2: calculator allowed.
- Answer in the unit the question gives.
- Show your working: a correct method can earn a mark even when the answer is wrong.
- Fractions and ratios in their simplest form.
- Use the π the question gives: 3.14 or $\frac{22}{7}$.

Units

1 km = 1000 m	1 m = 100 cm
1 kg = 1000 g	
1 l = 1000 ml = 1000 cm ³	
1 h = 60 min	1 min = 60 s

NUMBER & ALGEBRA

The Four Operations P4 to P5

$$() \rightarrow \times \div \rightarrow + -$$

Order of operations

Brackets first. Then $\times$ and $\div$, left to right. Then $+$ and $-$.

EXAMPLE

$$24 - 6 \times 3 = 24 - 18 = 6$$

$$(24 - 6) \times 3 = 18 \times 3 = 54$$

$$36 \div 4 \times 3 = 9 \times 3 = 27$$

$$\times 300 = \times 3 \times 100$$

$\times$ or $\div$ by multiples of 10

Split off the zeros: use the digit, then the 10, 100 or 1000.

EXAMPLE

$$23 \times 300 = 23 \times 3 \times 100 = 6900$$

$$5600 \div 70 = 560 \div 7 = 80$$



Rounding

Look at the next digit. 5 or more, round up.

nearest 10 $\rightarrow 36\,482 \approx 36\,480$
 nearest 100 $\rightarrow 36\,482 \approx 36\,500$
 nearest 1000 $\rightarrow 36\,482 \approx 36\,000$

Factors and Multiples P4

	Factors
20	1, 2, 4, 5, 10, 20
30	1, 2, 3, 5, 6, 10, 15, 30
Both	1, 2, 5, 10

Common factors

List the factors of each number in pairs. The ones in both lists are common factors.

	Multiples
4	4, 8, 12, 16, 20, 24
6	6, 12, 18, 24, 30, 36
Both	12, 24

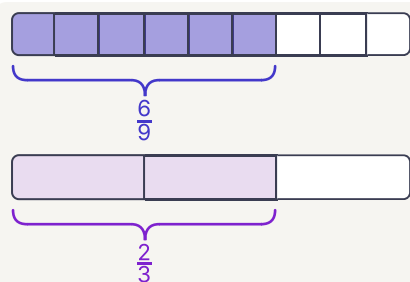
Common multiples

List the multiples of each number. The ones in both lists are common multiples.



NUMBER & ALGEBRA

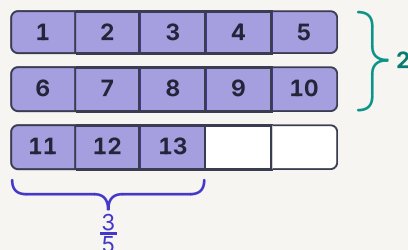
Fractions P3 to P6



Simplest form

Divide the numerator and the denominator by the same number, until no number divides both.

$$\frac{6}{9} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$$

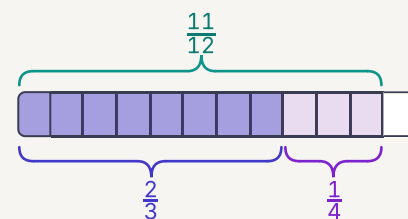


Mixed number to improper fraction

Each whole is 5 fifths. Count all the fifths.

$$\text{fifths} \rightarrow 2 \times 5 + 3 = 13$$

$$2\frac{3}{5} = \frac{13}{5}$$

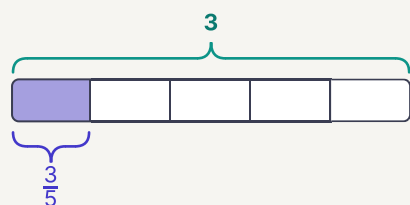


Add or subtract fractions

Same denominators first. Then add or take away the numerators.

$$\frac{2}{3} + \frac{1}{4} = \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

$$\frac{7}{10} - \frac{2}{5} = \frac{7}{10} - \frac{4}{10} = \frac{3}{10}$$

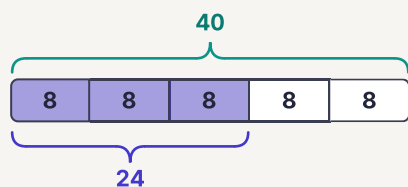


Division as a fraction

A whole number $\div$ a whole number is a fraction.

$$3 \div 5 = \frac{3}{5}$$

$$9 \div 4 = \frac{9}{4} = 2\frac{1}{4}$$



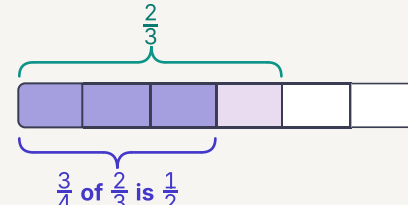
Fraction of a quantity

"Of" means $\times$. Or find 1 unit first.

$$\frac{3}{5} \times 40 = 24$$

$$1 \text{ unit} \rightarrow 40 \div 5 = 8$$

$$3 \text{ units} \rightarrow 3 \times 8 = 24$$

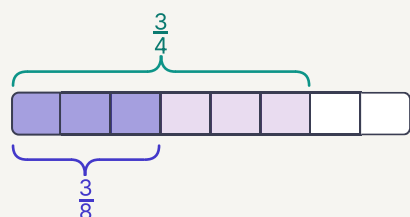

Fraction $\times$ fraction

Numerator $\times$ numerator, denominator $\times$ denominator, then simplify. A mixed number: make it improper first.

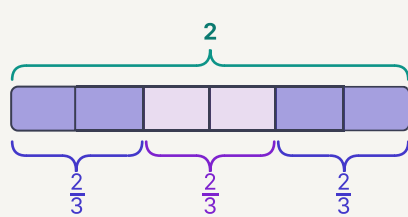
$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$$

$$\frac{5}{4} \times \frac{6}{5} = \frac{30}{20} = 1\frac{1}{2}$$

$$2\frac{1}{4} \times 6 = \frac{9}{4} \times 6 = 13\frac{1}{2}$$


Fraction $\div$ whole number: share it out

$$\frac{3}{4} \div 2 = \frac{3}{8}$$


Whole $\div$ fraction: how many fit?

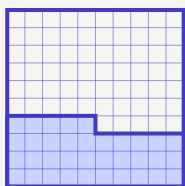
$$2 \div \frac{2}{3} = 3$$

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

 $\div$ a fraction: Keep, Change, Flip


NUMBER & ALGEBRA

Decimals P4 to P5

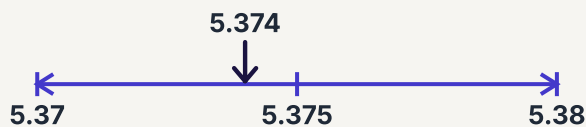


Decimals and fractions

Decimal to fraction: over 10, 100 or 1000, then simplify.
Fraction to decimal: divide.

$$0.35 = \frac{35}{100} = \frac{7}{20}$$

$$7 \div 8 = 0.875$$



Rounding decimals

Look at the next digit. 5 or more, round up.

nearest whole number $\rightarrow 5.374 \approx 5$

1 decimal place $\rightarrow 5.374 \approx 5.4$

2 decimal places $\rightarrow 5.374 \approx 5.37$

	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
2.375			2	.	3	7	5
$\times 100$	2	3	7	.	5		

$\times$ or $\div$ by 10, 100, 1000

$\times$ moves every digit 1, 2 or 3 places left. $\div$ moves them right.

$$2.375 \times 100 = 237.5$$

$$46.2 \div 100 = 0.462$$

$$0.35 \times 60 = 0.35 \times 6 \times 10 = 21$$



Changing units

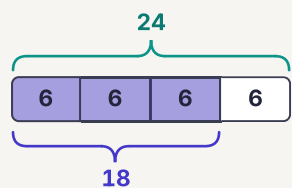
To a bigger unit, $\div$. To a smaller unit, $\times$.

$$4500 \text{ cm} \rightarrow 4500 \div 100 = 45 \text{ m}$$



NUMBER & ALGEBRA

Percentage P5 to P6

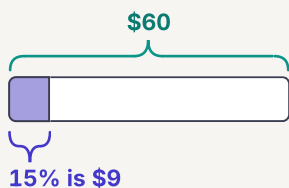


Part as a percentage

$$\frac{\text{part}}{\text{whole}} \times 100\%$$

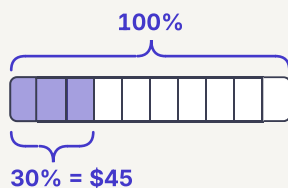
EXAMPLE

18 out of 24
 $\rightarrow \frac{18}{24} \times 100\% = 75\%$



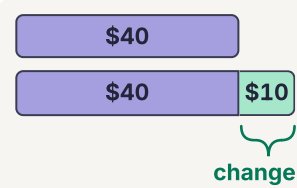
Percentage of a quantity

$$15\% \text{ of } \$60 \\ \rightarrow \frac{15}{100} \times 60 = \$9$$



30% is \$45: find 10%, then 100%

$$10\% \rightarrow 45 \div 3 = \$15 \\ 100\% \rightarrow 15 \times 10 = \$150$$

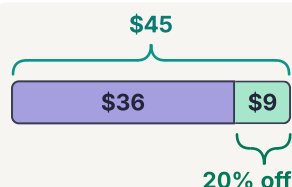


Percentage change

$$\frac{\text{change}}{\text{original}} \times 100\%$$

EXAMPLE

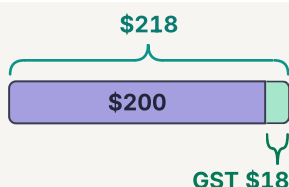
\$40 to \$50
 $\rightarrow 10 \div 40 \times 100\% = 25\%$
 \$50 to \$40
 $\rightarrow 10 \div 50 \times 100\% = 20\%$



Discount

Price after discount = usual price - discount

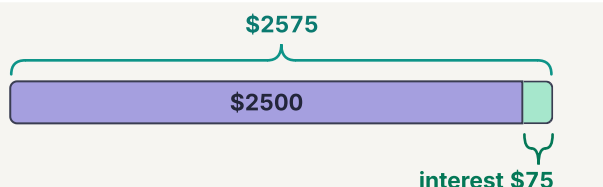
$$20\% \text{ off } \$45 \\ \rightarrow \frac{20}{100} \times 45 = \$9 \\ \text{pay} \rightarrow 45 - 9 = \$36$$



GST

Price with GST = price + GST. Use the rate the question gives.

$$9\% \text{ GST on } \$200 \\ \rightarrow \frac{9}{100} \times 200 = \$18 \\ \text{pay} \rightarrow 200 + 18 = \$218$$

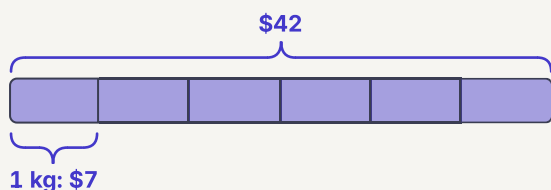


Annual interest

A percentage of the money saved, paid each year.

$$3\% \text{ a year on } \$2500 \rightarrow \frac{3}{100} \times 2500 = \$75 \\ \text{after 1 year} \rightarrow 2500 + 75 = \$2575$$

Rate P5



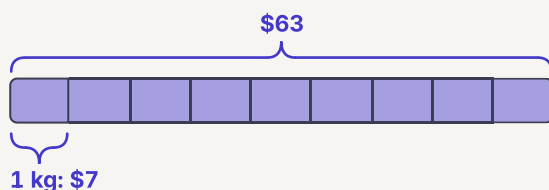
Rate

$$\text{total} \div \text{number of units}$$

The amount for 1 unit. Number of units = total ÷ rate.

EXAMPLE

$$\$42 \text{ for } 6 \text{ kg} \rightarrow 42 \div 6 = \$7$$



Total amount

$$\text{rate} \times \text{number of units}$$

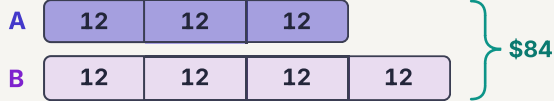
EXAMPLE

$$9 \text{ kg} \rightarrow 7 \times 9 = \$63$$



NUMBER & ALGEBRA

Ratio P6



Share \$84 in the ratio 3 : 4. Find 1 unit first.

$3 + 4 = 7$ units in all.

1 unit $\rightarrow 84 \div 7 = \$12$

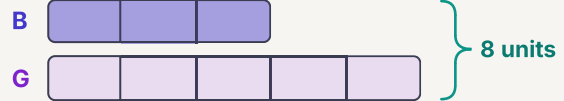
A $\rightarrow 3 \times 12 = \$36$

B $\rightarrow 4 \times 12 = \$48$

Simplest form: $\div$ every term by the same number

$12 : 18 = 12 \div 6 : 18 \div 6 = 2 : 3$

$12 : 18 : 24 = 2 : 3 : 4$



Boys : girls = 3 : 5

boys as a fraction of girls $\rightarrow 3 \div 5 = \frac{3}{5}$

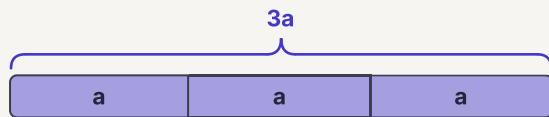
boys as a fraction of all $\rightarrow 3 \div 8 = \frac{3}{8}$

Equivalent ratios: $\times$ or $\div$ every term by the same number

$2 : 5 = 2 \times 3 : 5 \times 3 = 6 : 15$

$3 : 4 = ? : 20 \rightarrow 3 \times (20 \div 4) = 15$

Algebra P6



A letter stands for an unknown number

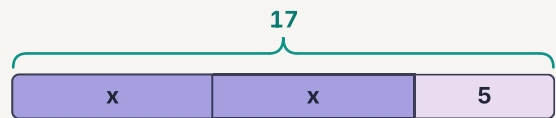
$$3a = 3 \times a, \quad \frac{a}{3} = a \div 3$$

$$5a + 2 - 2a + 4 = 3a + 6$$

Add or take away like terms only

$$3 \times 4 + 6 = 18$$

Substitute $a = 4$ into $3a + 6$



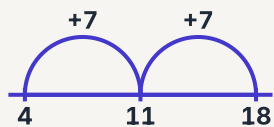
Solve $2x + 5 = 17$: undo each step, then check

$2x \rightarrow 17 - 5 = 12$

$x \rightarrow 12 \div 2 = 6$

check $\rightarrow 2 \times 6 + 5 = 17$

Number and Shape Patterns P5



Number pattern: the n th term

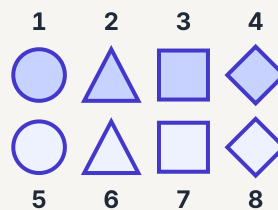
first $+ (n - 1) \times$ jump

The 20th term is 19 jumps after the first.

EXAMPLE

20th term

$$\rightarrow 4 + 19 \times 7 = 137$$



Repeating pattern

Divide by the length of the repeat. The remainder is the place in the repeat.

50th, repeat of 4
 $\rightarrow 50 \div 4 = 12 \text{ R } 2$



MEASUREMENT & GEOMETRY

Time P3

12-hour	24-hour
9.05 a.m.	09 05
12 noon	12 00
3.15 p.m.	15 15
midnight	00 00

24-hour clock

After 12 noon, add 12 to the hour. Midnight is 00 00.

3.15 p.m. = 15 15



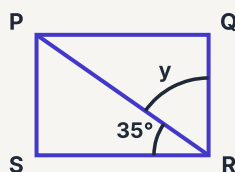
How long it takes

Count on to the next hour, then whole hours, then the minutes left.

9.45 a.m. to 11.15 a.m.

→ 15 min + 1 h + 15 min = 1 h 30 min

Geometry P4 to P6



Angles in a right angle

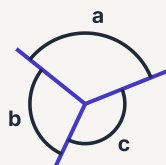
They add up to 90° . Every corner of a rectangle is 90° .

$\angle y \rightarrow 90 - 35 = 55^\circ$



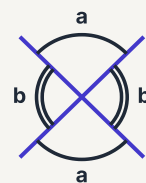
Angles on a straight line

$$a + b = 180^\circ$$

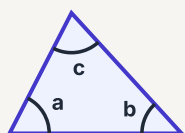


Angles at a point

$$a + b + c = 360^\circ$$

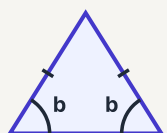


Vertically opposite angles are equal

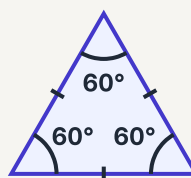


Angles in a triangle

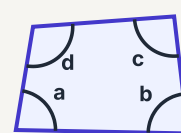
$$a + b + c = 180^\circ$$



Isosceles triangle: 2 equal sides, 2 equal base angles

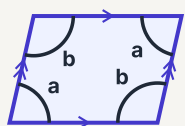

Equilateral triangle: every angle is 60°

$$180 \div 3 = 60^\circ$$



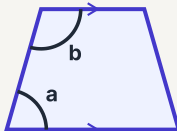
Angles in a quadrilateral

$$a + b + c + d = 360^\circ$$



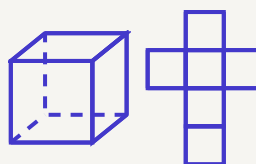
Parallelogram, rhombus: opposite angles are equal

$$a + b = 180^\circ$$



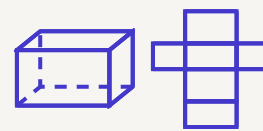
Trapezium: the angles between parallel sides

$$a + b = 180^\circ$$



Cube

6 equal square faces. A dotted line is a hidden edge.



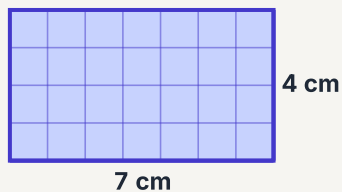
Cuboid

6 rectangle faces, in 3 matching pairs.



MEASUREMENT & GEOMETRY

Area & Perimeter P3 to P5



Rectangle: area A, perimeter P

$$A = l \times b \quad P = 2l + 2b$$

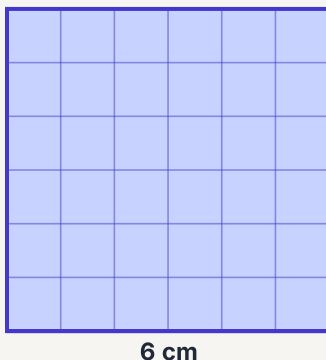
l = length, b = breadth. Breadth from the area: $A \div l$.

EXAMPLE

$$7 \times 4 = 28 \text{ cm}^2$$

$$7 + 4 + 7 + 4 = 22 \text{ cm}$$

$$\text{breadth} \rightarrow 84 \div 12 = 7 \text{ cm}$$



Square: area A, perimeter P

$$A = s \times s \quad P = 4 \times s$$

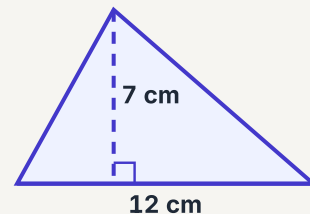
s = side. The side from the perimeter: $P \div 4$.

EXAMPLE

$$6 \times 6 = 36 \text{ cm}^2$$

$$4 \times 6 = 24 \text{ cm}$$

$$\text{side} \rightarrow 36 \div 4 = 9 \text{ cm}$$



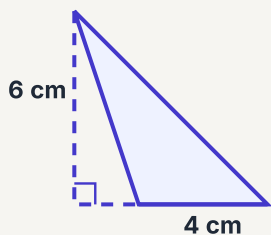
Area of a triangle

$$A = \frac{1}{2} \times b \times h$$

b = base, h = height.

EXAMPLE

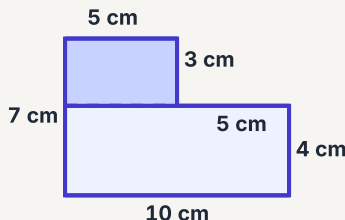
$$\frac{1}{2} \times 12 \times 7 = 42 \text{ cm}^2$$



The height can be outside

It is always at right angles to the base.

$$\frac{1}{2} \times 4 \times 6 = 12 \text{ cm}^2$$



Composite figures

Area: split into rectangles, then add. Perimeter: the outside edge only.

$$\text{area} \rightarrow 10 \times 4 + 5 \times 3 = 55 \text{ cm}^2$$

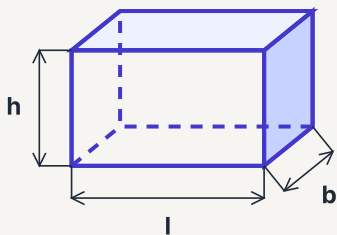
perimeter

$$\rightarrow 10 + 4 + 5 + 3 + 5 + 7 = 34 \text{ cm}$$



MEASUREMENT & GEOMETRY

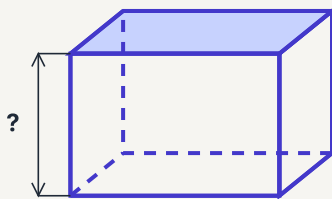
Volume P5 to P6



Volume of a cuboid

$$V = l \times b \times h$$

a cube: edge $\times$ edge $\times$ edge

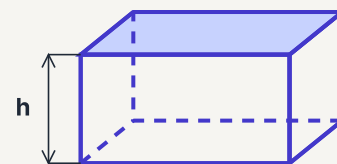


Height of a cuboid

$$h = V \div \text{base area}$$

EXAMPLE

360 cm^3 , base 40 cm^2
 $\rightarrow 360 \div 40 = 9 \text{ cm}$

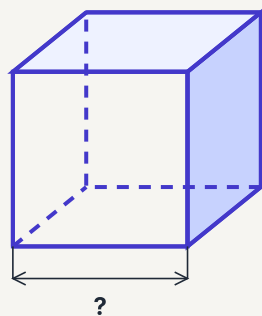


Area of a face

$$A = V \div h$$

EXAMPLE

480 cm^3 , $h = 6 \text{ cm}$
 $\rightarrow 480 \div 6 = 80 \text{ cm}^2$

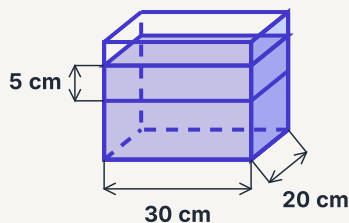


Edge of a cube

$$\text{edge} = \sqrt[3]{V}$$

EXAMPLE

$343 \text{ cm}^3 \rightarrow \sqrt[3]{343} = 7 \text{ cm}$



Water added or taken out

Water added or taken out = $l \times b \times$ the change in height.

$$30 \times 20 \times 5 = 3000 \text{ cm}^3$$

$$1 \ell = 1000 \text{ cm}^3$$

Litres and cm^3

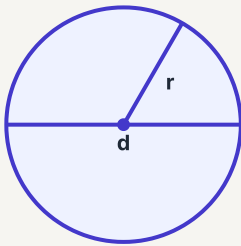
$$1 \text{ ml} = 1 \text{ cm}^3$$

EXAMPLE

$$7200 \div 1000 = 7.2 \ell$$

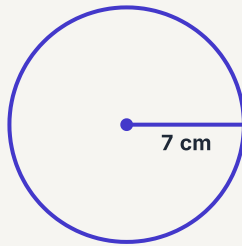


MEASUREMENT & GEOMETRY

Circles P6 $\pi = \frac{22}{7}$


Diameter and radius

$$d = 2r$$

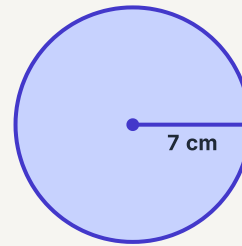


Circumference: the distance around

$$C = \pi d = 2\pi r$$

EXAMPLE

$$2 \times \pi \times 7 = 44 \text{ cm}$$

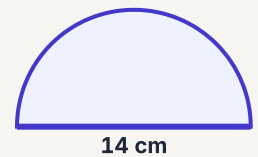


Area of a circle

$$A = \pi r^2$$

EXAMPLE

$$\pi \times 7 \times 7 = 154 \text{ cm}^2$$

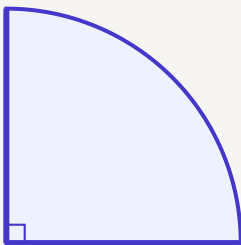


Half circle: perimeter

$$\frac{1}{2}\pi d + d$$

EXAMPLE

$$\frac{1}{2} \times \pi \times 14 + 14 = 36 \text{ cm}$$

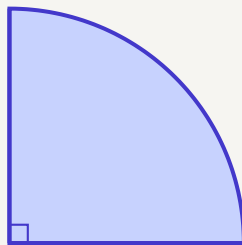


Quarter circle: perimeter

$$\frac{1}{2}\pi r + 2r$$

EXAMPLE

$$\frac{1}{2} \times \pi \times 7 + 2 \times 7 = 25 \text{ cm}$$

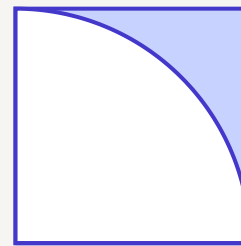


Half or quarter circle: area

$$\frac{1}{2}\pi r^2 \text{ or } \frac{1}{4}\pi r^2$$

EXAMPLE

$$\frac{1}{4} \times \pi \times 14^2 = 154 \text{ cm}^2$$



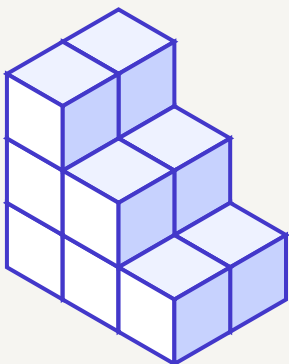
Composite figures

Area: add or take away.

Perimeter: the outside edge only.

$$\text{square} - \text{quarter circle} \\ \rightarrow 14 \times 14 - 154 = 42 \text{ cm}^2$$

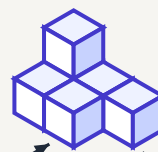
Shapes and Spatial Reasoning P5



Count cubes layer by layer

Count each layer, from the bottom up.

$$\text{bottom to top} \\ \rightarrow 6 + 4 + 2 = 12$$



Front

Side

Front view

Side view



Front and side views

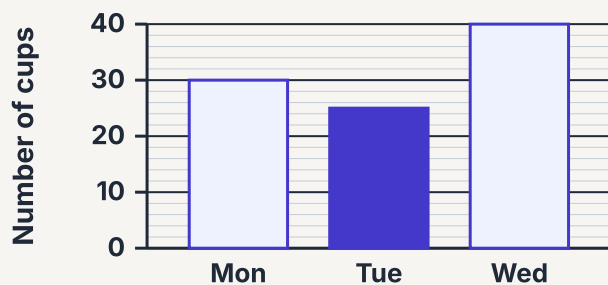
Look straight at one face.

Draw only the squares you see.



STATISTICS

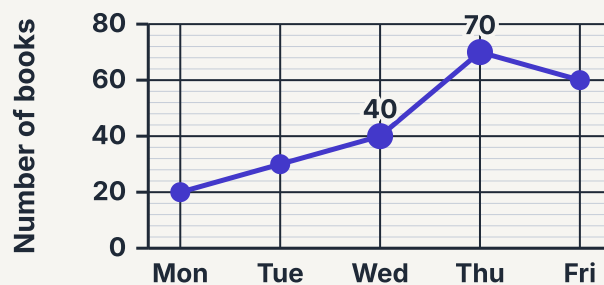
Graphs & Tables P3 to P4



Read the scale first

Find what one step on the scale is worth first.

half of a step of 10 $\rightarrow 10 \div 2 = 5$

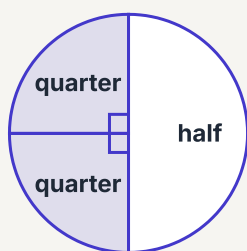
Tuesday $\rightarrow 20 + 5 = 25$


Read a line graph

Read each point against the scale. The steepest rise is the biggest change.

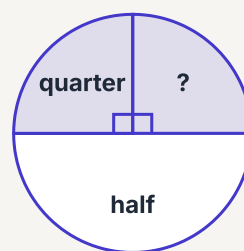
Wed to Thu $\rightarrow 70 - 40 = 30$

Pie Charts P4



A sector is a fraction of the whole

A right-angle mark is a quarter of the circle. A straight line across the centre cuts it in half.



A part from the total

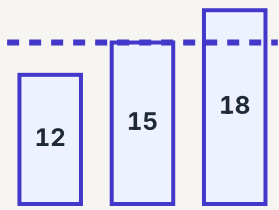
Part = fraction $\times$ total. Total = part $\div$ fraction.

a quarter of 120 $\rightarrow \frac{1}{4} \times 120 = 30$

total $\rightarrow 4 \times 18 = 72$


STATISTICS

Average P6

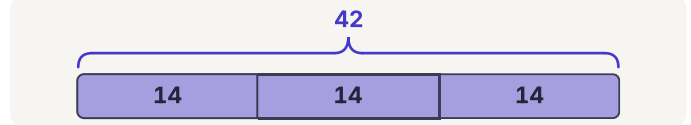


Average

total ÷ number

EXAMPLE

$$(12 + 15 + 18) \div 3 = 15$$



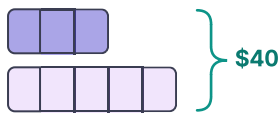
Total from the average

average × number

EXAMPLE

$$3 \text{ numbers, average } 14 \rightarrow 14 \times 3 = 42$$

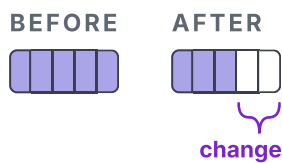
PROBLEM SUMS: HOW TO SPOT EACH METHOD



Units and parts method

"Find 1 unit first"

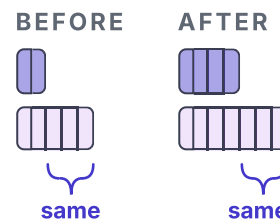
Turn the story into equal units, find 1 unit, then scale up.



Before and after method

"Something changes partway"

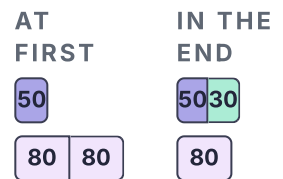
Draw before and after, then find what changed and what did not.



Constant total and constant difference

"What did not change?"

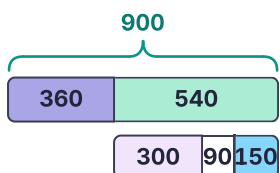
Find what stays the same: the total, the difference or one part.



Equal stage method

"They end up equal"

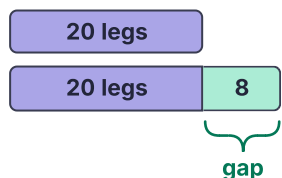
Make the equal amounts the same number of units first.



Branching method

"Of the remainder"

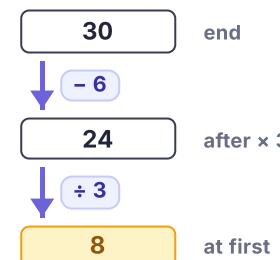
Take each fraction of what is LEFT, not of the whole.



Assumption method

"Two kinds, two totals"

Assume all are one kind, then swap: the gap ÷ the difference per swap.



Working backwards

"Start from the end"

Start from the end and undo each step in reverse.

	Cups	Plates	Cost
1 set	1	1	\$2
15 sets	15	15	\$30

Grouping method

"Sold in fixed sets"

Find what one set is worth. Then the total ÷ one set = how many sets.

