CLASS 10 MATHS

Formula Revision Sheet • Academic Session 2026–27

How to use this sheet

Use this as a quick revision checklist alongside the prescribed Class 10 textbook. Confirm each topic against the official CBSE Mathematics Basic/Standard curriculum and your school's plan.

This is a starter collection of commonly taught Class 10 formulas, not a complete or official CBSE syllabus sheet.

1. Algebra

Quadratic equation	$ax^2 + bx + c = 0, a \neq 0$
Quadratic formula	$x = [-b \pm \sqrt{(b^2 - 4ac)}] / (2a)$
Discriminant	$D = b^2 - 4ac$; $D > 0$: two distinct real roots; $D = 0$: equal real roots; $D < 0$: no real roots.
Sum and product of roots	For $ax^2 + bx + c = 0$: $\alpha + \beta = -b/a$; $\alpha\beta = c/a$.
Pair of linear equations	$a1x + b1y + c1 = 0$; $a2x + b2y + c2 = 0$.
Unique solution condition	$a1/a2 \neq b1/b2$
AP nth term and sum	$a_n = a + (n - 1)d$; $S_n = n/2 [2a + (n - 1)d]$

2. Coordinate geometry and triangles

Distance formula	$d = \sqrt{[(x2 - x1)^2 + (y2 - y1)^2]}$
Midpoint formula	$M = ((x1 + x2)/2, (y1 + y2)/2)$
Section formula (internal)	If P divides AB in ratio m:n: $P = ((mx2 + nx1)/(m+n), (my2 + ny1)/(m+n))$.
Pythagoras theorem	In a right triangle: $hypotenuse^2 = perpendicular^2 + base^2$.
Similar triangles	Corresponding sides are proportional; area ratio = square of corresponding side ratio.

3. Trigonometry

Basic ratios	sin θ = perpendicular/hypotenuse; cos θ = base/hypotenuse; tan θ = perpendicular/base.
Reciprocal ratios	cosec θ = 1/sin θ; sec θ = 1/cos θ; cot θ = 1/tan θ.
Quotient identities	tan θ = sin θ/cos θ; cot θ = cos θ/sin θ.
Pythagorean identities	$\sin^2\theta + \cos^2\theta = 1$; $1 + \tan^2\theta = \sec^2\theta$; $1 + \cot^2\theta = \operatorname{cosec}^2\theta$.
Complementary angles	$\sin(90° - \theta) = \cos\theta$; $\cos(90° - \theta) = \sin\theta$; $\tan(90° - \theta) = \cot\theta$.
Standard angles	θ: 0°, 30°, 45°, 60°, 90°
sin θ	0, 1/2, 1/√2, √3/2, 1
cos θ	1, √3/2, 1/√2, 1/2, 0
tan θ	0, 1/√3, 1, √3, not defined

4. Circles and mensuration

Circle	Circumference = $2\pi r$; Area = πr^2
Arc length	$(\theta/360°) \times 2\pi r$, for central angle θ in degrees
Sector area	$(\theta/360°) \times \pi r^2$, for central angle θ in degrees
Cuboid	Volume = lwh; total surface area = $2(lw + wh + hl)$
Cube	Volume = a^3; lateral area = $4a^2$; total area = $6a^2$
Cylinder	Volume = $\pi r^2 h$; curved area = $2\pi rh$; total area = $2\pi r(h + r)$
Cone	Volume = $\frac{1}{3}\pi r^2 h$; curved area = πrl; total area = $\pi r(l + r)$
Sphere	Volume = $4/3\pi r^3$; surface area = $4\pi r^2$
Hemisphere	Volume = $2/3\pi r^3$; curved area = $2\pi r^2$; total area = $3\pi r^2$
Cone slant height	$l = \sqrt{(r^2 + h^2)}$, for a right circular cone

5. Statistics, probability and identities

Mean (ungrouped)	Mean = sum of observations / number of observations
Mean (frequency table)	$\bar{x} = \Sigma f_i x_i / \Sigma f_i$
Median (grouped data)	Median = $l + [(N/2 - cf)/f] \times h$
Mode (grouped data)	Mode = $l + [(f_1 - f_0)/(2f_1 - f_0 - f_2)] \times h$
Probability	P(E) = favourable outcomes / total equally likely outcomes
Complement	P(not E) = 1 − P(E)
Algebraic identities	$(a+b)^2 = a^2+2ab+b^2$; $(a-b)^2 = a^2-2ab+b^2$; $a^2-b^2 = (a-b)(a+b)$
Cube identities	$(a+b)^3 = a^3+3a^2b+3ab^2+b^3$; $(a-b)^3 = a^3-3a^2b+3ab^2-b^3$

Before publishing: compare every topic with the official 2026–27 CBSE Mathematics Basic/Standard curriculum. Remove or label any topic that is not in the course you intend to support.

Prepared for Nikita Digi Store • Class 10 Maths • 2026–27