



BAAP OF ALL FORMULA LISTS





FOR IIT JEE

CONIC SECTIONS

 [Download Doubtnut Today](#)



SL#	FORMULA
1	Equation of an Ellipse (Standard Form) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
2	$r_1 + r_2 = 2a$, where r_1, r_2 are distances from any point $P(x, y)$ on the ellipse to the two foci.
3	$a^2 = b^2 + c^2$
4	Eccentricity $e = \frac{c}{a} < 1$
5	Equations of Directrices $x = \pm \frac{a}{e} = \pm \frac{a^2}{c}$
6	Parametric Form $\begin{cases} x = a \cos t \\ y = b \sin t \end{cases}$ where $(0 \leq t \leq 2\pi)$
7	General Form $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$, where $B^2 - 4AC < 0$
 पढ़ना हुआ आसान	 DOWNLOAD DOUBTNUT TODAY FOR FREE PDFs & MORE
8	General Form with Axes Parallel to the Coordinate Axes $Ax^2 + Cy^2 + Dx + Ey + F = 0$, where $AC > 0$
9	Circumference $L = 4aE(e)$, where the function E is the complete elliptic integral of the second kind.
10	Approximate Formulas of the Circumference $L = \pi(1.5(a + b) - \sqrt{ab})$, $L = \pi\sqrt{2(a^2 + b^2)}$.
11	$S = \pi ab$
12	Equation of a Hyperbola (Standard Form)

	$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$
13	$ r_1 - r_2 = 2a$, where r_1, r_2 are distances from any point $P(x, y)$ on the hyperbola to the two foci.
14	Equations of Asymptotes $y = \pm \frac{b}{a}x$
15	$c^2 = a^2 + b^2$
 पढ़ना हुआ आसान	 DOWNLOAD DOUBTNUT TODAY FOR FREE PDFs & MORE
16	Eccentricity $e = \frac{c}{a} > 1$
17	Equations of Directrices $x = \pm \frac{a}{e} = \pm \frac{a^2}{c}$
18	Parametric Equation of the Right Branch of a Hyperbola $\begin{cases} x = a \cosh t \\ y = b \sinh t \end{cases}$ where $0 \leq t < \infty$
19	General Form $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$, where $B^2 - 4AC < 0$
20	Asymptotic Form $xy = \frac{e^2}{4}$ or $y = \frac{k}{x}$, where $k = \frac{e^2}{4}$. In this case, the asymptotes have equations $x = 0$ and $y = 0$
21	Equation of a Parabola (Standard Form) $y^2 = 2px$
22	General Form $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$, where $B^2 - 4AC = 0$
23	$y = ax^2, p = (2a)$ Equation of the directrix $y = -\frac{p}{2}$ Coordinates of the focus $F\left(0, \frac{p}{2}\right)$ Coordinates of the vertex $M(0, 0)$
 पढ़ना हुआ आसान	 DOWNLOAD DOUBTNUT TODAY FOR FREE PDFs & MORE
24	General Form, Axis Parallel to the y-axis

$$Ax^2 + Dx + Ey + F = 0 \text{ (A,E nonzero)}, y = ax^2 + bx + c, p = \frac{1}{2a}.$$

$$\text{Equation of the directrix } y = y_0 - \frac{p}{2},$$

$$\text{coordinates of the focus } F\left(x_0, y_0 + \frac{p}{2}\right),$$

$$\text{Coordinates of the vertex } x_0 = -\frac{b}{2a}, y_0 = ax_0^2 + bx_0 + C = \frac{4ac - b^2}{4a}$$

[Download Hundreds of such PDFs for FREE on DoubtNut App Today](#)

[Download DoubtNut to Ask Any Math Question By just a click](#)

[Get A Video Solution For Free in Seconds](#)

[DoubtNut Has More Than 1 Lakh Video Solutions](#)

[Free Video Solutions of NCERT, RD Sharma, RS Aggarwal, Cengage \(G.Tewani\), Resonance DPP, Allen, Bansal, FIITJEE, Akash, Narayana, VidyaMandir](#)

[Download DoubtNut Today](#)

doubtNut
100% FREE APP

Get Answer just with a click!

doubtNut has more than 1 Lakh Video Solutions

Update the App now!

GET IT ON
Google Play

The advertisement features two smartphones. The left phone displays a math problem involving sets: $X = \{x \in \mathbb{R} \mid x^2 - 2x + 1 = 0\}$, $Y = \{x \in \mathbb{R} \mid x^2 - 3x + 2 = 0\}$, and $Z = \{x \in \mathbb{R} \mid x^2 - 4x + 3 = 0\}$. Below the problem are buttons for "#SETS", "#SUBSETS", "#BOARDS", "#Intermediate", and "#MCQOC", along with a "Practice Questions" section. The right phone displays the "Library" section of the app, showing "NCERT Questions" and "Tips & Tricks" with various math topics like "Integrate the functions" and "Range of Trigonometric Expression".