

Integration


$$\int \frac{1}{ax^2 + bx + c} dx$$


**Solution in
only 3 secs**

Short Tricks

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Learn Vocabulary With Funny Tricks  **Part - 12**

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Vocabulary with short forms | Part - 12 | for SSC, CDS,...

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$\int f'(x) \cdot e^{f(x)} dx$ **Solve in** ...

... | Short Tricks | Part - 5 | for NDA, ...

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$$\int \frac{1}{\text{quadratic Eq}^n} dx \quad \text{or} \quad \int \frac{1}{ax^2 + bx + c}$$

$$D = b^2 - 4ac = +ve$$



$$\text{Ans} = \frac{1}{\sqrt{D}} \log \left| \frac{f'(x) - \sqrt{D}}{f'(x) + \sqrt{D}} \right| + C$$

$$D = b^2 - 4ac = -ve$$



$$\text{Ans} = \frac{2}{\sqrt{D}} \tan^{-1} \left[\frac{f'(x)}{\sqrt{D}} \right] + C$$

Ques: $\rightarrow \int \frac{1}{x^2 + 4x + 6} dx$

Solve: -

$$D = 16 - 24 = -8 < 0$$

$$= \frac{2}{\sqrt{8}} \tan^{-1} \left[\frac{2x+4}{\sqrt{8}} \right] + C \rightarrow \text{Answer}$$

Que: $\rightarrow \int \frac{1}{2x^2 + 7x + 2} dx$

Solve: - $D = 49 - 16 = +33$

$$= \frac{1}{\sqrt{33}} \log \left| \frac{4x + 7 - \sqrt{33}}{4x + 7 + \sqrt{33}} \right| + C \rightarrow \text{Answer}$$

Que: $\rightarrow \int \frac{1}{x^2 - 10x + 34} dx$

(a) $\frac{1}{\sqrt{36}} \log \left| \frac{2x - 10 - \sqrt{36}}{2x - 10 + \sqrt{36}} \right| + C$ (b) $\frac{2}{\sqrt{36}} \tan^{-1} \frac{2x - 10}{\sqrt{36}} + C$ (c) $-e^{2x - 10} + C$

