

♥រូបមន្តសង្ខេប អាំងតេក្រាលមិនកំណត់♥  
 រៀបរៀង និងបោះពុម្ពដោយ: ស៊ី សំអុន  
 ឆ្នាំរៀបចំ: ០៩៦ ៩៤០ ៥៨៤០២

I លក្ខណៈអាំងតេក្រាល

a  $\int kf(x)dx = k \int f(x)dx$

b  $\int [f(x) \pm g(x)]dx = \int f(x)dx \pm \int g(x)dx$

II រូបមន្តគ្រឹះមួយចំនួន

1  $\int kdx = kx + c ; c \in \mathbb{R}$

2  $\int x^n dx = \frac{x^{n+1}}{n+1} + c ; c \in \mathbb{R}$

3  $\int e^x dx = e^x + c ; c \in \mathbb{R}$

4  $\int \frac{1}{x} dx = \ln |x| + c ; c \in \mathbb{R}$

5  $\int \frac{1}{x^2} dx = -\frac{1}{x} + c ; c \in \mathbb{R}$

6  $\int \frac{1}{x^n} dx = -\frac{1}{(n-1)x^{n-1}} + c ; c \in \mathbb{R}$

7  $\int \frac{1}{\sqrt{x}} dx = 2\sqrt{x} + c ; c \in \mathbb{R}$

8  $\int \cos x dx = \sin x + c ; c \in \mathbb{R}$

9  $\int \sin x dx = -\cos x + c ; c \in \mathbb{R}$

10  $\int \cos ax dx = \frac{1}{a} \sin ax + c ; c \in \mathbb{R}$

11  $\int \sin ax dx = -\frac{1}{a} \cos ax + c ; c \in \mathbb{R}$

12  $\int (1 + \tan^2 x) dx = \int \frac{1}{\cos^2 x} dx = \tan x + c$

13  $\int (1 + \cot^2 x) dx = \int \frac{1}{\sin^2 x} dx = -\cot x + c$

III អាំងតេក្រាលផលគុណ

1  $\int u'(x)u^n(x)dx = \frac{u^{n+1}(x)}{n+1} + c ; c \in \mathbb{R}$

2  $\int u'(x)e^{u(x)}dx = e^{u(x)} + c ; c \in \mathbb{R}$

3  $\int u'(x) \sin u(x)dx = -\cos u(x) + c$

4  $\int u'(x) \cos u(x)dx = \sin u(x) + c$

5  $\int u'(x)(1 + \tan u(x))dx = \tan u(x) + c$

6  $\int u'(x)(1 + \cot u(x))dx = -\cot u(x) + c$

IV អាំងតេក្រាលផលចែក

1  $\int \frac{u'(x)}{u(x)} dx = \ln u(x) + c ; c \in \mathbb{R}$

2  $\int \frac{u'(x)}{u^2(x)} dx = -\frac{1}{u(x)} + c ; c \in \mathbb{R}$

3  $\int \frac{u'(x)}{\sqrt{u(x)}} dx = 2\sqrt{u(x)} + c ; c \in \mathbb{R}$

4  $\int \frac{u'(x)}{u^n(x)} dx = -\frac{1}{(n-1)u^{n-1}(x)} + c$

5  $\int \frac{u'(x)}{\cos^2 u(x)} dx = \tan u(x) + c ; c \in \mathbb{R}$

6  $\int \frac{u'(x)}{\sin^2 u(x)} dx = -\cot u(x) + c ; c \in \mathbb{R}$

V អាំងតេក្រាលដោយផ្នែក  $\int u dv = uv - \int v du$  មានពីរទម្រង់សំខាន់ៗ

$$P(x) \times \begin{cases} e^{ax} \\ \sin ax \\ \cos ax \end{cases} \quad \text{តាង } u = P(x) \text{ និង } dv = \begin{cases} e^{ax} \\ \sin ax \\ \cos ax \end{cases} \quad (1)$$

$$P(x) \times \ln(ax+b) \text{ តាង } u = \ln(ax+b) \text{ និង } dv = P(x) \quad (2)$$

**សូមសំណាងល្អ!**