♡រូបមន្តសង្ខេប អាំងតេក្រាលមិនកំណត់♡
រៀបរៀង និងបង្រៀនដោយ: ស៊ុំ សំអុន
ទូរស័ព្ទ: ០៩៦ ៩៤០ ៥៨៤០

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 $\int udv = uv - \int vdu$ មានពីរទម្រង់សំខាន់ៗ

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

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

សូមសំណាងល្អ!