| DIFREÁIL (DIFFERENTIATION) | | SUIMEÁIL (INTEGRATION) |
|---|---|---|

## DIFREÁIL (DIFFERENTIATION)

| $f(x)$ | $f'(x) \equiv \dfrac{d}{dx}[f(x)]$ |
|---|---|
| $x^n$ | $nx^{n-1}$ |
| $\ln x$ | $\dfrac{1}{x}$ |
| $\cos x$ | $-\sin x$ |
| $\sin x$ | $\cos x$ |
| $\tan x$ | $\sec^2 x$ |
| $\sec x$ | $\sec x \tan x$ |
| $\operatorname{cosec} x$ | $-\operatorname{cosec} x \cot x$ |
| $\cot x$ | $-\operatorname{cosec}^2 x$ |
| $e^x$ | $e^x$ |
| $e^{ax}$ | $ae^{ax}$ |
| $a^x$ | $a^x \ln a$ |
| $\cos^{-1}\dfrac{x}{a}$ | $-\dfrac{1}{\sqrt{a^2-x^2}}$ |
| $\sin^{-1}\dfrac{x}{a}$ | $\dfrac{1}{\sqrt{a^2-x^2}}$ |

## SUIMEÁIL (INTEGRATION)

Glactar $a>0$ agus fágtar tairisigh na suimeála ar lár.

We take $a>0$ and omit constants of integration.

| $f(x)$ | $\int f(x)\,dx$ |
|---|---|
| $x^n\ (n \neq -1)$ | $\dfrac{x^{n+1}}{n+1}$ |
| $\dfrac{1}{x}$ | $\ln |x|$ |
| $\cos x$ | $\sin x$ |
| $\sin x$ | $-\cos x$ |
| $\tan x$ | $\ln |\sec x|$ |
| $\sec x$ | $\ln |\sec x + \tan x|$ |
| $\operatorname{cosec} x$ | $\ln \left| \tan \dfrac{x}{2} \right|$ |
| $\cot x$ | $\ln |\sin x|$ |
| $e^x$ | $e^x$ |