Profesor Blaga Mirela-Gabriela

Integrarea directă	
$\int dx = x + c$ $\int a\,dx = a \cdot x + c\,, \qquad a \in \mathbb{R}$	1. $\int 3\,dx$ 2. $\int ln2\,dx$ 3. $\int (arcsin\,x + arccos\,x)\,dx$
$\int x^a dx = \frac{x^{a+1}}{a+1} + c\,, \qquad a \in \mathbb{R} \backslash \{-1\}$	1. $\int x\,dx$ 2. $\int \sqrt{x}\,dx$ 3. $\int \frac{1}{\sqrt{x}}\,dx$ 4. $\int x\sqrt{x}\,dx$ 5. $\int \frac{1}{x^2}\,dx$ 6. $\int \frac{x^3+1}{x^2}\,dx$ 7. $\int (x+2)^{10}\,dx$
$\int \frac{1}{x}\,dx = ln\lvert x\rvert + c$	
$\int \frac{1}{ax+b}\,dx = \frac{1}{a} ln\lvert ax+b\rvert + c, \qquad a \in \mathbb{R}^*$	1. $\int \frac{1}{x-1}\,dx$ 2. $\int \frac{1}{3x+5}\,dx$ 3. $\int \frac{1}{(x-1)(x+1)}\,dx$ 4. $\int \frac{x^3}{x-1}\,dx$
$\int e^x\,dx = e^x + c$	
$\int e^{-x}\,dx = -e^{-x} + c$	
$\int a^x\,dx = \frac{a^x}{ln\,a} + c\,, \qquad a \in (0, \infty) \backslash \{1\}$	1. $\int 5^x\,dx$ 2. $\int \frac{5^x - 3^x}{2^x}\,dx$ 3. $\int e^{\alpha x}\,dx\,, \qquad \alpha \in \mathbb{R}^*$
$\int \frac{1}{x^2+a^2}\,dx = \frac{1}{a} arctg\frac{x}{a} + c, \qquad a \in \mathbb{R}^*$	1. $\int \frac{1}{x^2+4}\,dx$ 2. $\int \frac{1}{4x^2+9}\,dx$ 3. $\int \frac{1}{(x^2+1)(x^2+2)}\,dx$

$\int \frac{1}{x^2-a^2}\,dx = \frac{1}{2a}\ln\left\|\frac{x-a}{x+a}\right\| + c, \quad a \in \mathbb{R}^*$	1. $\int \frac{1}{x^2-4}\,dx$ 2. $\int \frac{1}{4x^2-1}\,dx$ 3. $\int \frac{1}{(x^2-1)(x^2-2)}\,dx$ 4. $\int \frac{x^2}{x^2-4}\,dx$
$\int \frac{x}{x^2+a^2}\,dx = \frac{1}{2}\ln(x^2+a^2) + c, \quad a \in \mathbb{R}^*$	$\int \frac{x}{x^2+3}\,dx$
$\int \frac{x}{x^2-a^2}\,dx = \frac{1}{2}\ln\|x^2-a^2\| + c, \quad a \in \mathbb{R}^*$	$\int \frac{x}{x^2-4}\,dx$
$\int \frac{1}{\sqrt{x^2+a^2}}\,dx = \ln\left(x+\sqrt{x^2+a^2}\right) + c, \quad a \in \mathbb{R}^*$	$\int \frac{1}{\sqrt{x^2+4}}\,dx$
$\int \frac{1}{\sqrt{x^2-a^2}}\,dx = \ln\left\|x+\sqrt{x^2-a^2}\right\| + c, \quad a \in \mathbb{R}^*$	1. $\int \frac{1}{\sqrt{x^2-3}}\,dx$ 2. $\int \frac{\sqrt{x^2-3}-\sqrt{x^2+3}}{\sqrt{x^4-9}}\,dx$
$\int \frac{1}{\sqrt{a^2-x^2}}\,dx = \arcsin\frac{x}{a} + c, \quad a \in \mathbb{R}^*$	1. $\int \frac{1}{\sqrt{25-x^2}}\,dx$ 2. $\int \frac{1}{\sqrt{1-25x^2}}\,dx$
$\int \frac{x}{\sqrt{x^2+a^2}}\,dx = \sqrt{x^2+a^2} + c, \quad a \in \mathbb{R}^*$	$\int \frac{x}{\sqrt{x^2+5}}\,dx$
$\int \frac{x}{\sqrt{x^2-a^2}}\,dx = \sqrt{x^2-a^2} + c, \quad a \in \mathbb{R}^*$	$\int \frac{x}{\sqrt{x^2-4}}\,dx$
$\int \frac{x}{\sqrt{a^2-x^2}}\,dx = -\sqrt{a^2-x^2} + c, \quad a \in \mathbb{R}^*$	$\int \frac{x}{\sqrt{3-x^2}}\,dx$
$\int \sin x\,dx = -\cos x + c$	
$\int \sin\alpha x\,dx = -\frac{\cos\alpha x}{\alpha} + c\,, \quad \alpha \in \mathbb{R}^*$	1. $\int \sin 3x\,dx$ 2. $\int \sin x \cdot \cos x\,dx$
$\int \cos x\,dx = \sin x + c$	
$\int \cos\alpha x\,dx = \frac{\sin\alpha x}{\alpha} + c\,, \quad \alpha \in \mathbb{R}^*$	$\int \cos 7x\,dx$
$\int tgx\,dx = -\ln\|\cos x\| + c$	
$\int ctgx\,dx = \ln\|\sin x\| + c$	
$\int \frac{1}{\cos^2 x}\,dx = tgx + c$	$\int (tg^2 x + 1)\,dx = tgx + c$
$\int \frac{1}{\sin^2 x}\,dx = -ctgx + c$	$\int \frac{1}{\sin^2 x \cdot \cos^2 x}\,dx$