Apresentação.

Programação.

C.I.

i) $$\int \frac{x}{\sqrt{1-x^2}}\,dx = -\frac{1}{2}\int \underbrace{-2x}_{g'(x)} \cdot \underbrace{(1-x^2)^{-\frac{1}{2}}}_{g(x)} = -\frac{1}{2}\,\frac{(1-x^2)^{\frac{1}{2}}}{-\frac{1}{2}+1} =$$

$$= -\frac{\sqrt{1-x^2}}{\cancel{2}\left(\frac{1}{\cancel{2}}\right)} =$$

$$= -\sqrt{1-x^2} + C, \; C \in$$

$$(1-x^2)' = 1' - (x^2)' = -(2x) = -2x$$

j) $\int \operatorname{sen}(x)\cdot\cos^5(x)\,dx = -\int -\underbrace{\operatorname{sen}(x)}_{u'(x)}\cdot(\underbrace{\cos(x)}_{u(x)})^5\,dx = -\frac{(\cos(x))^6}{6}+C, C\in\mathbb{R}$

k) $\int tg(x)\,dx = -\int \frac{-\operatorname{sen}(x)}{\cos(x)}\,dx = -\ln|\cos(x)|+C, C\in\mathbb{R}$

$(\cos(x))' = -\operatorname{sen}(x)$

l) $\int \frac{\ln(x)}{x}\,dx = \int \underbrace{\ln(x)}_{u(x)}\cdot\underbrace{\frac{1}{x}}_{u'(x)}\,dx = \frac{\ln(x)^2}{2}+C, C\in\mathbb{R}$

m) $\int e^{\overbrace{tg(x)}^{u(x)}}\cdot\overbrace{\sec^2(x)}^{u'(x)} = e^{tg(x)}+C, C\in\mathbb{R}$

$(tg(x))' = \sec^2(x)$

[illegible] $) + c,\ c \in \mathbb{R}$

[illegible]

[illegible] $+ c,\ c \in \mathbb{R}$

[illegible]

0) $\int \sin(\sqrt{2}x)\,dx = -\frac{1}{\sqrt{2}}\cos(\sqrt{2}x) + C,\ C \in \mathbb{R}$ $\quad -\frac{\sqrt{2}}{2}\cos\sqrt{2}x + C$

$(\sqrt{2}x)' = \sqrt{2}$

7) $\int \frac{x^2+1}{x}\,dx = \int \frac{x^2}{x} + \frac{1}{x}\,dx = \int x\,dx + \int \frac{1}{x}\,dx =$

$= \frac{x^2}{2} + \ln|x| + C,\ C \in \mathbb{R}$

1) $\frac{x}{(7+5x^2)^{\frac{3}{2}}} \quad \frac{1}{10} \quad 10x \cdot (7+5x^2)^{-\frac{3}{2}} = \frac{(7+5x^2)^{-\frac{3}{2}+1}}{10(-\frac{3}{2}+1)} = \frac{(\sqrt{7+5x^2})}{\frac{-10}{2}} = \frac{\frac{1}{\sqrt{7+5x^2}}}{\frac{-10}{2}} =$

$= \frac{1}{-5\sqrt{7+5x^2}}$

$(7+5x^2)' = 5\,2x = 10x$