$$\int 1 \, dx = x + c$$

$$\int 1 \, dy = y + c$$

$$\int 1 \, d\text{evil} = \text{evil} + c$$

$$\int 1 \, dx = x + C$$

$$\int e^x = e^x + c$$

$$\int e^{3x} = \frac{1}{3} e^{3x} + c$$

$$\left(\frac{1}{3} e^{3x}\right)' = \frac{1}{3} 3 e^{3x}$$

$$\int \sin(2x-7)\,dx = -\frac{\cos(2x-7)}{2} + c$$

$$-\frac{\left(-\sin(2x-7)\,2\right)}{2}$$

$$\int f(ax+b)\,dx$$

$$= \frac{F(ax+b)}{a} + c$$

$$\int \frac{1}{1+x^2} = \arctan x$$

$$\int \frac{1}{1+(2x-1)^2} = \frac{\arctan(2x-1)}{2}$$

$$\int \frac{1}{4x^2-4x+\underbrace{2}_{1+1}}$$

$$\frac{1}{1+4x^2-4x+1}$$

$$\int \frac{1}{1+(2x-1)^2} = \frac{\arctan(2x-1)}{2}$$

$$\int \operatorname{sgn} x\,dx \quad \nexists$$

$$\int 2x\, e^{x^2}\, dx = e^{x^2} + c$$

$$(e^{x^2})' = 2x\, e^{x^2}$$

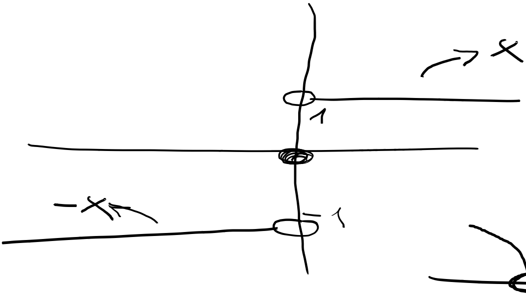
$$2x \cdot e^{x^2}$$

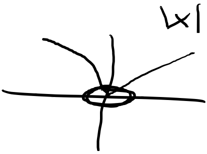
$$y = x^2$$

$$dy = 2x\, dx \qquad \cancel{dx = \frac{dy}{2x}}$$

$$\int e^y\, dy = e^y + c$$
$$= e^{x^2} + c$$

$$\int \cancel{2x}\, e^y \frac{dy}{\cancel{2x}} = \int e^y\, dy$$



$$\int \frac{1}{x \ln(\ln x) \ln x}\, dx \qquad x > 0$$

$\ln x > 0$

$\ln(\ln x) \neq 0$

$x \in (1, e)$

$x \in (e, \infty)$

$$\varphi(x) = y = \ln x \qquad \varphi'(x)$$

$$dy = \frac{1}{x}\, dx \qquad \varphi'(x)$$

$$f = \frac{1}{\ln y \cdot y}$$

$$\int \frac{1}{\ln(y)\, y}\, dy = \qquad x \in (1, e) \quad (\alpha, \beta)$$

$y \in (0, 1)$

$x \in (1, \infty)$ $\quad \alpha, \beta$

$\ln x > 1$ $\quad \ln x$

$(1, \infty)$ $\quad a, b$

$(0, 1)$

$(a, b)$

$$(1, \infty) \quad t = \ln y$$

$$dt = \frac{1}{y}\, dy$$

$$\int \frac{1}{t}\, dt = \ln|t| + c$$

$F(y)$

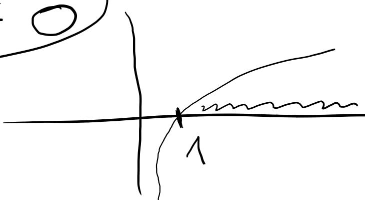
$$= \ln|\ln y| + c$$

$$= \ln|\ln(\ln x)| + c$$

$x > 0 \quad \ln x > 0$

$\ln(\ln x) \neq 0$

$\to x > 1$




$\ln x \neq 1$

$x \neq e$

$$\boxed{\begin{array}{l} x \in (1, e) \\ x \in (e, \infty) \end{array}}$$

$$\int e^{x^2}\,dx$$

$$\int u'v = uv - \int uv'$$

$$\int x \cdot \ln x = \frac{x^2}{2} \cdot \ln x - \int \frac{x^2}{2} \cdot \frac{1}{x}$$

$u' = x$ $\quad v = \ln x$ $\quad \sim \frac{x}{2}$

$u = \frac{x^2}{2}$ $\quad v' = \frac{1}{x}$

$$= \frac{x^2}{2} \ln x - \frac{x^2}{4} \qquad x > 0$$

$\frac{1}{x}$ spoj ✓ ☺

na $(0, \infty)$

$\int 1 \cdot \operatorname{arctan} x \, dx \ldots$

$u'$ $\quad v$