

$$\int x^n dx = \frac{x^{n+1}}{n+1} \quad n \neq -1$$

$$\int \frac{1}{x} dx = \ln|x| \quad n \neq -1 \quad a \neq 0$$

$$\int (ax+b)^n dx = \frac{1}{(n+1)a} * (ax+b)^{n+1}$$

$$\int \frac{1}{ax+b} dx = \frac{1}{a} + \ln|ax+b| \quad a \neq 0$$

$$\int \frac{x}{ax+b} dx = \frac{x}{a} - \frac{b}{a^2} \ln|ax+b| \quad a \neq 0$$

$$\int \frac{x}{(ax+b)^2} dx = \frac{b}{a^2} * \frac{1}{ax+b} + \frac{1}{a^2} \quad a \neq 0$$

$$\int x(ax+b)^n dx = \frac{1}{(n+2)a^2} (ax+b)^{n+1} - \frac{b}{(n+1)a^2} (ax+b)^{n+1} \quad n \neq -1 \quad n \neq -2 \quad a \neq 0$$

$$\int \frac{1}{x} (ax+b)^n dx = \frac{1}{n} (ax+b)^n + b \int \frac{1}{x} (ax+b)^{n-1} dx \quad n > 0$$

$$\int \frac{1}{x(ax+b)} dx = -\frac{1}{b} + \ln \left| \frac{ax+b}{x} \right| \quad b \neq 0$$

$$\int \frac{1}{x(ax+b)^n} dx = \frac{1}{(n-1)b} * \frac{1}{(ax+b)^{n-1}} + \frac{1}{b} \int \frac{1}{x(ax+b)^{n-1}} dx \quad n > 0 \quad n \neq 0 \quad b \neq 0$$

$$\int \frac{ax+b}{cx+d} dx = \frac{a}{c} x + \frac{bc-ad}{c^2} * \ln|cx+d| \quad c \neq 0$$

$$\int \frac{1}{(ax+b)(cx+d)} dx = \begin{cases} \xrightarrow{bc-ad \neq 0} \frac{1}{bc-ad} \ln \left| \frac{cx+d}{ax+b} \right| \\ \xrightarrow{bc-ad=0} -\frac{1}{c} * \frac{1}{ax+b} \end{cases}$$

$$\int \frac{x}{(ax+b)(cx+d)} dx = \begin{cases} \xrightarrow{bc-ad \neq 0} \frac{1}{bc-ad} * \left(\frac{b}{a} \ln|ax+b| * \frac{d}{c} \ln|cx+d| \right) \\ \xrightarrow{bc-ad=0 \dots ac \neq 0} -\frac{1}{ac} * \ln \left| ax+b + \frac{b}{ac} \right| * \frac{1}{ax+b} \end{cases}$$