$$\int^{x} ()^{a} = \frac{x^{a+1}}{a+1}$$

$$\int^{x} \frac{1}{()} = {}^{x}\not{\ell}$$

$$\int^{x} 1 = x$$

$$\int^{x} () = \frac{x^{2}}{2}$$

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

$$\int^{x} \frac{1}{\sqrt{()}} = 2\sqrt{x}$$

$$\int^{x} \sqrt{()} = \frac{2}{3}\,x^{3/2}$$

$$\int_{dx}^{1|\infty} \frac{1}{x^{4/3}}\colon \quad \int_{dx}^{0|1} \frac{1}{\sqrt{x}} = 2\colon \quad \int_{dx}^{-1|1} \frac{1}{x^{5/3}}\colon \quad \int_{dx}^{1|\infty} x^{-5/2}$$

$$\int^{x} 3\,()^{5} + 7\,()^{4} + 3\,()^{2} + 2\,() = \frac{1}{2}\,x^{6} + \frac{7}{5}\,x^{5} + x^{3} + x^{2}$$

$$\int^{x} \left(()^{2} - 1\right)^{3} = \frac{1}{7}\,x^{7} - \frac{3}{5}\,x^{5} + x^{3} - x$$

$$\int^{x} \left(()^{2} + () + 1\right)^{2} = \frac{1}{5}\,x^{5} + \frac{1}{2}\,x^{4} + x^{3} + x^{2} + x$$

$$\int^{x} \frac{()^{3} + ()^{2} + () + 1}{()^{2}} = \frac{1}{2}\,x^{2} + x - \frac{1}{x} + {}^{x}\not{\ell}$$

$$\int^{x} \frac{2()^{3} + 8\,() + 5}{()} = \frac{2}{3}\,x^{3} + 8x + 5^{\,x}\not{x}$$

$$\int^{x} \frac{()^{1/5} + ()^{1/2}}{()} = 2\sqrt{x} + 5\,x^{1/5}$$

$$\int^{x} \frac{3()^{2/3} + 2()^{1/3} + ()^{1/5}}{()^{1/4}} = \frac{36}{17}\,x^{17/12} + \frac{24}{13}\,x^{13/12} + \frac{20}{19}\,x^{19/20}$$

$$\int^{x} \frac{() + ()^{1/4}}{()^{1/3}} = \frac{3}{5}\,x^{5/3} + \frac{12}{11}\,x^{11/12}$$

$$\int^{x} \frac{()^{1/4} + ()^{2/7}}{()^{3/2}} = -4\,x^{-1/4} - \frac{14}{3}\,x^{-3/14}$$

$$\int^{x} \frac{1 - \left(2 - \sqrt{()}\right)^{2}}{()^{1/3}} = \frac{24}{7}\,x^{7/6} - \frac{3}{5}\,x^{5/3} - \frac{9}{2}\,x^{2/3}$$

$$\int^{x} \frac{\left(\sqrt{()} - 3\right)^{2}\left(\sqrt{()} + 3\right)^{2}}{()^{2}\sqrt{()}} = 2\sqrt{x} + \frac{36}{\sqrt{x}} - \frac{54}{x\sqrt{x}}$$

$$\int^{x} \frac{()}{(() - 1)^{1/3}} = \frac{3}{5}\,(x - 1)^{5/3} + \frac{3}{2}\,(x - 1)^{2/3}$$

subst

$$\int^{x} (2\,() + 5)^{1/3} = \frac{3}{8}\,(2x + 5)^{4/3}$$

$$\int^{x} \sqrt{3\,() + 5} = \frac{2}{9}\,(3x + 5)^{3/2}$$

$$\int_{dx}^{1|\infty} (x + 2)^{-1/3} \underset{u\,=\,x\,+\,2}{=} \int_{du}^{3|\infty} u^{-1/3} = \begin{cases} \frac{3}{2}u^{2/3} \\ 3|\infty \end{cases} \qquad \text{div}$$

$$\int^x () \sqrt{()^2 - 1} = \frac{1}{3}\left(x^2 - 1\right)^{3/2}$$

$$\int^x () \sqrt{()^2 + 4} = \frac{1}{3}\left(x^2 + 4\right)^{3/2}$$

$$\int^x () \sqrt{()^2 + 7} = \frac{1}{3}\left(x^2 + 7\right)^{3/2}$$

$$\int^x \frac{2\,() + 7}{\sqrt{()^2 + 7\,() - 1}} = 2\sqrt{x^2 + 7x - 1}$$

$$\int^x \frac{8\,() + 2}{\sqrt{2()^2 + () + 1}} = 4\sqrt{2x^2 + x + 1}$$

$$\int^x \frac{3()^2 + 1}{\sqrt{()^3 + () + 7}} = 2\sqrt{x^3 + x + 7}$$

$$\int^x \frac{2 - 2\,()}{\sqrt{3 + 2\,() - ()^2}} = 2\sqrt{3 + 2x - x^2}$$

$$\int^x \frac{\left(3 - 5\sqrt{()}\right)^4}{\sqrt{()}} = -\frac{2}{25}\left(3 - 5\sqrt{x}\right)^5$$

$$\int^x ()^2 \left(()^3 + 2\right)^{1/3} = \frac{1}{4}\left(x^3 + 2\right)^{4/3}$$

$$\int^x \frac{2()^2}{\left(()^3 - 1\right)^{1/3}} = \left(x^3 - 1\right)^{2/3}$$

$$\int^x ()^2 \left(2 - 5()^3\right)^{1/4} = -\frac{4}{75}\left(2 - 5x\right)^{5/4}$$

part int

$$\int^{x} ()\sqrt{2\,()+3} = \frac{1}{10}\left(2x+3\right)^{5/2} - \frac{1}{2}\left(2x+3\right)^{3/2}$$

$$\int^{x} ()\,\left(2\,()-3\right)^{1/5} = \frac{5}{44}\left(2x-3\right)^{11/5} + \frac{5}{8}\left(2x-3\right)^{6/5}$$

$$\int^{x} ()^{2}\sqrt{3\,()-1} = \frac{2}{189}\left(3x-1\right)^{7/2} + \frac{4}{135}\left(3x-1\right)^{5/2} + \frac{2}{81}\left(3x-1\right)^{3/2}$$

Beta integral $p \geqslant 0 \leqslant q$: $$\int_{dx}^{0|1} x^{p}\,\overbrace{1-x}^{q} = \frac{p!q!}{(p+q+1)!} = B\left(p+1{:}q+1\right)$$

$0 = p$: $$\int_{dx}^{0|1} \overbrace{1-x}^{q} = -\begin{cases}\dfrac{\overbrace{1-x}^{q+1}}{q+1} \\ 0|1\end{cases} = \frac{1}{q+1} = \frac{q!}{(q+1)!}$$

$0 \leqslant p \curvearrowright p+1$: $$\int_{dx}^{0|1} x^{p+1}\,\overbrace{1-x}^{q} = -\int_{dx}^{0|1} x^{p+1}\,\frac{d}{dx}\frac{\overbrace{1-x}^{q+1}}{q+1} = \int_{dx}^{0|1} \frac{d}{dx}\,x^{p+1}\,\frac{\overbrace{1-x}^{q+1}}{q+1} - \begin{cases} x^{p+1}\dfrac{\overbrace{1-x}^{q+1}}{q+1} \\ 0|1 \end{cases} \quad (=0)$$

2

$$= \frac{p+1}{q+1}\int_{dx}^{0|1} x^{p}\,\overbrace{1-x}^{q+1} \underset{\text{ind}}{=} \frac{p+1}{q+1}\frac{p!\,(q+1)!}{(p+q+2)!} = \frac{(p+1)!q!}{(p+q+2)!}$$