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① $\int \left(\sqrt[3]{x^2} + \frac{1}{\sqrt{x}}\right) dx$

$\sqrt[3]{x^2} = x^{2/3}$ = sub. pert.

$\frac{1}{\sqrt{x}} = \frac{1}{x^{1/2}} = x^{-1/2}$ = Solv. kedua

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

$\int x^{2/3}\, dx$

$\int x^{\frac{2}{3}} dx = \frac{1}{\frac{5}{3}} x^{\frac{5}{3}} = \frac{3}{5} x^{5/3}$

$\int x^{-1/2}\, dx$

$\int x^{-1/2} dx = \frac{1}{1/2} x^{1/2} = 2x^{1/2}$

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

$x^{5/3} = x^{1/3} \cdot x^{2/3} = x\sqrt[3]{x^2}$

$x^{1/2} = \sqrt{x}$

$= \int \left(\sqrt[3]{x^2} + \frac{1}{\sqrt{x}}\right) dx = \frac{3}{5} \sqrt[3]{x^5} + 2\sqrt{x} + C$

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② $\int \left(\sqrt{2x+1}\right)^3 \sqrt{2}\, dx$

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

$\int (2x+1)^{3/2} \sqrt{2}\, dx$

$\sqrt{2} \int \sqrt{2} (2x+1)^{3/2} dx$

$\sqrt{2} \int (u)^{3/2} \left(\frac{1}{2} du\right)$

$\frac{\sqrt{2}}{2} \int u^{3/2} du$

$\frac{\sqrt{2}}{2} \left[\frac{1}{5/2} u^{5/2}\right] + C$

$\frac{\sqrt{2}}{2} \left[\frac{2}{5} u^{5/2}\right] + C$

$\frac{\sqrt{2}}{\frac{5}{2}} \cdot \frac{2}{5} = \frac{\sqrt{2}}{5} u^{5/2} + C$

$\frac{\sqrt{2}}{5} \sqrt{(2x+1)^5} + C$

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

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③ $\int \frac{2v}{\sqrt{2v^2+5}}\,dv$

$\int 2v(2v^2+5)^{-1/2}\,dv$

$u = 2v^2+5$

$du = \frac{d}{dv}(2v^2+5)\,dv \Rightarrow du = 4v\,dv$

$\frac{1}{2}du = 2v\,dv$

$\int (u)^{1/2}\left(\frac{1}{2}du\right)$

$\frac{1}{2}\int u^{-1/2}\,du$

$\frac{1}{2}\left[\frac{1}{1/2}u^{1/2}\right]+c$

$\frac{1}{2}\left[2u^{1/2}\right]+c$

$\frac{1}{2}\cdot 2 = 1 \qquad u^{1/2}+c$

$(2v^2+5)^{1/2}+c$

$\sqrt{2v^2+5}+c$

$\int \frac{2v}{\sqrt{2v^2+5}}\,dv = \sqrt{2v^2+5}+c$

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4) $\int_{0^\circ}^{30^\circ} (\cos x (1 - \sin x)) \, dx$

$\int_0^{\pi/6} (\cos x - \cos x \sin x) \, dx$

$\int (\cos x) \, dx - \int (\cos x \sin x) \, dx$

$\int \cos x \, dx = \sin x$

$\int u \, du = \frac{1}{2} u^2$

$\int \cos x \sin x \, dx = \frac{1}{2} \sin^2 x$

$\int (\cos x - \cos x \sin x) \, dx = \sin x - \frac{1}{2} \sin^2 x + c$