ES PAG 394 N 1(c)

$$\int \sqrt[5]{x^3}\,dx = \int x^{\frac{3}{5}}\,dx = \frac{x^{\frac{3}{5}+1}}{\frac{3}{5}+1}+k = \frac{\sqrt[5]{x^8}}{\frac{8}{5}}+k =$$

$$= \frac{5}{8}\,x\sqrt[5]{x^3}+k \qquad k\in\mathbb{R}$$

N2

- $$\int \sqrt[7]{x}\,dx = \int x^{\frac{1}{7}}\,dx = \frac{x^{\frac{1}{7}+1}}{\frac{1}{7}+1}+k = \frac{x^{\frac{8}{7}}}{\frac{8}{7}}+k =$$

$$= \frac{\sqrt[7]{x^8}}{\frac{8}{7}} = \frac{7}{8}\,x\sqrt[7]{x} = \frac{7}{8}\,x\sqrt[7]{x}+k$$

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

$$= \int x^{\frac{1}{2}}\,x^{\frac{1}{4}}\,dx = \int x^{\frac{1}{2}+\frac{1}{4}}\,dx = \int x^{\frac{3}{4}}\,dx = \frac{x^{\frac{3}{4}+1}}{\frac{7}{4}}+k =$$

$$= \frac{4}{7}\,x\sqrt[4]{x^3}+k \qquad k\in\mathbb{R}$$

$$x^{\frac{n}{d}} = \sqrt[d]{x^n}$$

$$\frac{x^{\frac{7}{4}}}{\frac{7}{4}}+k = \frac{4}{7}\sqrt[4]{x^7}+k = \frac{4}{7}\sqrt[4]{x^4\cdot x^3}+k =$$

$$= \frac{4}{7}\,x\sqrt[4]{x^3}+k$$

- $$\int \sqrt{x\sqrt[3]{x^2}}\,dx = \int \sqrt[6]{x^5}\,dx = \frac{x^{\frac{5}{6}+1}}{\frac{11}{6}}+k = \frac{6}{11}\,x\sqrt[6]{x^5}+k$$

$$\left(x\sqrt[3]{x^2}\right)^{\frac{1}{2}} = \left(x\cdot(x)^{\frac{2}{3}}\right)^{\frac{1}{2}} = \left(x^{\frac{2}{3}+1}\right)^{\frac{1}{2}} = x^{\frac{5}{3}\cdot\frac{1}{2}} = x^{\frac{5}{6}}$$

$$\sqrt{\sqrt[3]{x^3\cdot x^2}}$$

$$\sqrt[6]{x^5}$$

N 3

$$\int (3x^2+2x+1)\,dx = 3\int x^2\,dx + 2\int x\,dx + \int 1\,dx =$$

$$= 3\,\frac{x^3}{3} + 2\,\frac{x^2}{2} + x + k =$$

$$= x^3 + x^2 + x + k \,. \qquad k \in \mathbb{R}$$

ES N 22

$$\int \frac{x-1}{\sqrt{x}+1}\,dx = (\bullet)$$

$$\begin{array}{r|l} x-1 & \sqrt{x}+1 \\ \hline x+\sqrt{x} & \sqrt{x}-1 \\ \hline // \;-1-\sqrt{x} & \\ -1-\sqrt{x} & \\ \hline // \quad // & \end{array}$$

$$\frac{(\sqrt{x}-1)\cancel{(\sqrt{x}+1)}}{\cancel{\sqrt{x}+1}}$$

$$\frac{x-1}{\sqrt{x}+1} = \frac{\cancel{(\sqrt{x}+1)}(\sqrt{x}-1)}{\cancel{\sqrt{x}+1}} + \frac{0}{\sqrt{x}+1} =$$

$$= \sqrt{x}-1$$

$$(\bullet) = \int (\sqrt{x}-1)\,dx =$$

$$= \int \sqrt{x}\,dx - \int 1\,dx = \frac{x^{\frac{1}{2}+1}}{\frac{3}{2}} - x + k = \frac{2x\sqrt{x}}{3} - x + k \,.$$