(P-Si)

$$\int x^2 \cdot \left(e^{\frac{x}{7}} + \sqrt[5]{3x^2}\right) dx = \int x^2 \cdot e^{\frac{x}{7}} dx + \int x^2 \cdot \sqrt[5]{3x^2} dx =$$

$$\int x^2 \cdot e^{\frac{x}{7}} dx = \begin{vmatrix} u = x^2 & u' = 2x \\ v' = e^{\frac{x}{7}} & v = 7 \cdot e^{\frac{x}{7}} \end{vmatrix} =$$

$$= x^2 \cdot 7 e^{\frac{x}{7}} + c - \int 2x \cdot 7 e^{\frac{x}{7}} dx$$

$$\int 2x \cdot 7 e^{\frac{x}{7}} dx = 14 \int x \cdot e^{\frac{x}{7}} dx = \begin{vmatrix} u = x & u' = 1 \\ v' = e^{\frac{x}{7}} & v = 7 e^{\frac{x}{7}} \end{vmatrix} =$$

$$= 14 \left(x \cdot 7 e^{\frac{x}{7}} + c - \int 1 \cdot 7 e^{\frac{x}{7}} dx \right) = 14 \left(7 x \cdot e^{\frac{x}{7}} + c - 7 \int e^{\frac{x}{7}} dx \right)$$

$$= 14 \left(7 x e^{\frac{x}{7}} - 49 e^{\frac{x}{7}} + c \right)$$

$$\sqrt[5]{3} \int x^2 \cdot x^{\frac{2}{3}} dx =$$

$$= \sqrt[5]{3} \cdot \int x^{\frac{12}{5}} dx =$$

$$= \sqrt[5]{3} \cdot \frac{x^{\frac{17}{5}}}{\frac{17}{5}} + c = \sqrt[5]{3} \cdot \frac{5 \cdot \sqrt[5]{x^{17}}}{17} + c$$

$$= x^2 \cdot 7 e^{\frac{x}{7}} - 14 \left(7 x e^{\frac{x}{7}} - 49 e^{\frac{x}{7}} \right) + \sqrt[5]{3} \frac{5 \, x^{\frac{17}{5}}}{17} + c$$