

$$\int \frac{\sqrt[3]{x^2} \cdot x^5 \cdot 5}{\sqrt[4]{x^7} \sqrt{x^2} \sqrt{x}} dx =$$

INT-S1-052

$$= 5 \int \frac{x^{\frac{2}{3}} \cdot x^5}{x^{\frac{7}{4}} (x^2 \cdot x^{\frac{1}{2}})^{\frac{1}{2}}} dx = 5 \int \frac{x^{\frac{2}{3}} \cdot x^5}{x^{\frac{7}{4}} \cdot x^{2 \cdot \frac{1}{2}} \cdot x^{\frac{1}{2} \cdot \frac{1}{2}}} dx =$$

$$= 5 \int x^{\frac{2}{3} + 5 - \frac{7}{4} - 1 - \frac{1}{4}} dx =$$

$$= 5 \int x^{\frac{8+60-21-12-3}{12}} dx = 5 \int x^{\frac{32-32}{12}} dx =$$

$$= 5 \int x^{\frac{8}{3}} dx = 5 \frac{1}{\frac{8}{3} + 1} x^{\frac{8}{3} + 1} = 5 \cdot \frac{3}{11} x^{\frac{11}{3}} =$$

$$= \frac{15}{11} \sqrt[3]{x^{11}} + k = \frac{15}{11} \sqrt[3]{x^3 x^3 x^3 x^2} + k =$$

$$= \frac{15}{11} x \cdot x \cdot x \sqrt[3]{x^2} + k = \boxed{\frac{15}{11} x^3 \sqrt[3]{x^2} + k}$$