Answer on Question #50468 – Math – Integral Calculus

∫(1+∜x)dx÷(1+√x) .please solve this problem

Solution

Evaluate

$$\int\left(1+\sqrt[4]{x}\right)dx=|additive\ property|=\int dx+\int\sqrt[4]{x}dx=\left|formula\ \int x^{\alpha}dx=\frac{x^{\alpha+1}}{\alpha+1}+C\right|=$$

$$=x+\frac{x^{\frac{1}{4}+1}}{\frac{1}{4}+1}+C=x+\frac{x^{5/4}}{5/4}+C=x+\frac{4}{5}x\cdot\sqrt[4]{x}+C,$$

where C is an arbitrary real constant.

Finally get

$$\frac{\int\left(1+\sqrt[4]{x}\right)dx}{1+\sqrt{x}}=\frac{x+\frac{4}{5}x\cdot\sqrt[4]{x}+C}{1+\sqrt{x}},$$

where C is an arbitrary real constant.