$$\int \frac{dx}{\sqrt[3]{x^2}+2\sqrt{x}} = \left[\begin{array}{l} \text{Замена:} \\ x^{\frac{1}{6}} = t \quad x^{\frac{2}{3}} = t^4;\ x^{\frac{1}{2}} = t^3 \\ x = t^6 \Rightarrow dx = 6t^5\,dt \end{array} \right] =$$

$$= \int \frac{6t^5\,dt}{t^4+2t^3} = \int \frac{6t^{\cancel{5}\,2}}{\cancel{t^3}(t+2)}\,dt =$$

$$= 6\int \frac{t^2}{t+2}\,dt = 6\cdot\int \left(t-2+\frac{4}{t+2}\right)dt$$

$$= 6\left(\int t\,dt - 2\int dt + 4\int \frac{d(t+2)}{t+2}\right) =$$

$$= \frac{6}{2}t^2 - 6\cdot 2\cdot t + 6\cdot 4\ln|t+2| + C =$$

$$= 12\sqrt[3]{x} - 12\sqrt[6]{x} + 24\cdot\ln|\sqrt[6]{x}+2| + C$$

$$\int \frac{dx}{2+\cos^2 x} = \left[\begin{array}{l} \text{Замена:} \quad t = \operatorname{tg} x \\ x = \operatorname{arctg} t \Rightarrow dx = \dfrac{dt}{1+t^2} \\ \cos^2 x = \dfrac{1}{t^2+1} \end{array} \right] =$$

$$= \int \frac{\frac{1}{t^2+1}\,dt}{2+\frac{1}{t^2+1}} = \int \frac{dt}{2t^2+3} = \frac{1}{2}\int \frac{dt}{t^2+\left(\frac{3}{2}\right)}$$

$$= \frac{1}{2}\cdot\frac{1}{\sqrt{\frac{3}{2}}}\cdot\operatorname{arctg}\left(\frac{t}{\sqrt{\frac{3}{2}}}\right) = \frac{1}{\sqrt{6}}\operatorname{arctg}\left(\frac{\sqrt{2}\operatorname{tg} x}{\sqrt{3}}\right) + C$$