Indefinite integral example

Calculate indefinite integral of function below

$$\int \sqrt{1+\sin x}\cdot \cos x\cdot dx$$

$$\int \sqrt{1+\sin x}\cdot \cos x\cdot dx=\left\{\begin{matrix}1+\sin x=t\\ \cos x\cdot dx=dt\\ dx=\frac{dt}{\cos x}\end{matrix}\right\}=\int \sqrt{t}\cdot \cos x\cdot \frac{dt}{\cos x}$$

$$\int \sqrt{t}\cdot dt=\int t^{\frac{1}{2}}\cdot dt=\frac{3}{2}\cdot t^{\frac{3}{2}}+C=$$

$$\frac{3}{2}\cdot (1+\sin x)^{\frac{3}{2}}+C$$