(a)

a) $\int_0^1 \frac{2x+1}{(x^2+x+1)^5}\,dx$

$\int \frac{2x+1}{(x^2+x+1)^5}\,dx$ $\quad \left[\begin{array}{l} x^2+x+1=u \\ du=(2x+1)\,dx \end{array} \right.$

$\int \frac{2x+1}{(x^2+x+1)^5}\,dx \quad \int \frac{du}{u^5} = \int u^{-5}\,du = \frac{u^{-4}}{-4} + C =$

$= \frac{1}{-4\cdot(x^2+x+1)} + C$

$\int_0^1 \frac{2x+1}{(x^2+x+1)^5}\,dx = \left[\frac{1}{-4(x^2+x+1)} \right]_0^1 =$

$= \frac{1}{-4(1^2+1+1)^4} + \frac{1}{4(1)} = 0'246913$

(9) b) $\int_1^4 \frac{(\sqrt{x}-1)^3}{\sqrt{x}}\,dx$

$\int \frac{(\sqrt{x}-1)^3}{\sqrt{x}}\,dx = \left[\begin{array}{l} u = \sqrt{x}-1 \\ du = \frac{1}{2\sqrt{x}}\,dx \qquad 2du = \frac{1}{\sqrt{x}}\,dx \end{array}\right.$

$= \int u^3 \cdot 2 \cdot du = 2\int u^3\,du = 2 \cdot \frac{1}{4} \cdot u^4 + C =$

$= \frac{1}{2} \cdot (\sqrt{x}-1)^4 + C$

$\int_1^4 \frac{(\sqrt{x}-1)^3}{\sqrt{x}}\,dx = \left[\frac{1}{2}(\sqrt{x}-1)^4\right]_1^4 =$

$= \frac{1}{2} \cdot (\sqrt{4}-1)^4 - \frac{1}{2} \cdot (\sqrt{1}-1)^4 =$

$= \frac{1}{2}(1)^4 - \frac{1}{2} \cdot 0 = \frac{1}{2} = 0{,}5$