15. $\int (18x - e^x)\sqrt{9x^2 - e^x}\,dx$

$u = 9x^2 - e^x \quad du = (18x - e^x)\,dx$

$= \int \sqrt{u}\,du$

$= \int u^{\frac{1}{2}}\,du$

$= \frac{u^{\frac{1}{2}+1}}{\frac{1}{2}+1} + C$

$= \frac{u^{3/2}}{\frac{3}{2}} + C$

$= \frac{2}{3}u^{3/2} + C$

$= \boxed{\frac{2}{3}(9x^2 - e^x)^{3/2} + C}$

16. $\int \frac{4}{1+e^{-x}}\,dx$

$= \int \frac{4}{1+\frac{1}{e^x}}\,dx$

$= \int \frac{4e^x}{e^x(1) + e^x\left(\frac{1}{e^x}\right)}\,dx$

$= \int \frac{4e^x}{e^x+1}\,dx$

$u = e^x + 1 \quad du = e^x\,dx$

$= 4\int \frac{e^x}{e^x+1}\,dx$

$= 4\int \frac{1}{u}\,du$

$= 4\ln|u| + C$

$= \boxed{4\ln|e^x+1| + C}$

$= 4\ln(e^x+1) + C$