FINAL

1. $\int \arccos x \arcsin x \, dx = x \arccos x \arcsin x + \sqrt{1-x^2}(\arccos x - \arcsin x) + 2x$

2. $\int \frac{4^x + 1}{2^x + 1} dx = x + \frac{1}{\ln 2}(2^x - \ln(2^x + 1)^2)$

3. $\int \sqrt{1 - \sin x} \, dx = 2\sqrt{1 + \sin x}$

4. $\int \frac{x \arctan x}{(1+x^2)^2} dx = \frac{x - 2\arctan x}{4(1+x^2)} + \frac{1}{4}\arctan x$

5. $\int \ln x \left(e^{x \ln x - x} + e^{x - x \ln x} \right) dx = e^{x \ln x - x} - e^{x - x \ln x}$

6. $\int x^n \ln x \, dx = \frac{x^{n+1}}{n+1}\left(\ln x - \frac{1}{n+1}\right)$