

## Table of Integrals

1.  $\int [u(x)]^r u'(x) dx = \frac{u^{r+1}(x)}{r+1} + C, r \neq -1$

2.  $\int \frac{u'(x)}{u(x)} dx = \ln |u(x)| + C$

3.  $\int e^{u(x)} u'(x) dx = e^{u(x)} + C$

4.  $\int \sin [u(x)] u'(x) dx = -\cos u(x) + C$

5.  $\int \cos [u(x)] u'(x) dx = \sin u(x) + C$

6.  $\int \tan [u(x)] u'(x) dx = \ln |\sec u(x)| + C$

7.  $\int \cot [u(x)] u'(x) dx = \ln |\sin u(x)| + C$

8.  $\int \sec [u(x)] u'(x) dx = \ln |\sec u(x) + \tan u(x)| + C$

9.  $\int \csc [u(x)] u'(x) dx = \ln |\csc u(x) - \cot u(x)| + C$

10.  $\int \sec^2[u(x)] u'(x) dx = \tan u(x) + C$

11.  $\int \csc^2[u(x)] u'(x) dx = -\cot u(x) + C$

$$12. \int \sec [u(x)] \tan [u(x)] u'(x) dx = \sec u(x) + C$$

$$13. \int \csc [u(x)] \cot [u(x)] u'(x) dx = -\csc u(x) + C$$

$$14. \int \frac{u'(x)}{\sqrt{a^2 - u^2(x)}} dx = \sin^{-1} \left[ \frac{u(x)}{a} \right] + C$$

$$15. \int \frac{u'(x)}{a^2 + u^2(x)} dx = \frac{1}{a} \tan^{-1} \left[ \frac{u(x)}{a} \right] + C$$

$$16. \int \frac{u'(x)}{u(x) \sqrt{u^2(x) - a^2}} dx = \frac{1}{a} \sec^{-1} \left[ \frac{u(x)}{a} \right] + C$$

$$17. \int \sinh [u(x)] u'(x) dx = \cosh u(x) + C$$

$$18. \int \cosh [u(x)] u'(x) dx = \sinh u(x) + C$$

$$19. \int \sin^{-1}[u(x)] u'(x) dx = u(x) \sin^{-1} u(x) + \sqrt{1 - u^2(x)} + C$$

$$20. \int \tan^{-1}[u(x)] u'(x) dx = u(x) \tan^{-1} u(x) - \frac{1}{2} \ln [1 + u^2(x)] + C$$

$$21. \int \sec^{-1}[u(x)] u'(x) dx = u(x) \sec^{-1} u(x) - \ln |u(x) + \sqrt{u^2(x) - 1}| + C$$