Derivatives

1. $\frac{d}{dx}\left(u^r\right) = ru^{r-1}\frac{du}{dx}$

2. $\frac{d}{dx}\left(e^u\right) = e^u\frac{du}{dx}$

3. $\frac{d}{dx}\left(\ln|u|\right) = \frac{1}{u}\frac{du}{dx}$

4. $\frac{d}{dx}\left(\sin(u)\right) = \cos(u)\frac{du}{dx}$

5. $\frac{d}{dx}\left(\cos(u)\right) = -\sin(u)\frac{du}{dx}$

6. $\frac{d}{dx}\left(\tan(u)\right) = \sec^2(u)\frac{du}{dx}$

7. $\frac{d}{dx}\left(\csc(u)\right) = -\csc(u)\cot(u)\frac{du}{dx}$

8. $\frac{d}{dx}\left(\sec(u)\right) = \sec(u)\tan(u)\frac{du}{dx}$

9. $\frac{d}{dx}\left(\cot(u)\right) = -\csc^2(u)\frac{du}{dx}$

Integrals

1. $\int x^r\,dx = \frac{x^{r+1}}{r+1} + C$

2. $\int e^x\,dx = e^x + C$

3. $\int \frac{1}{x}\,dx = \ln|x| + C$

4. $\int \sin(x)\,dx = -\cos(x) + C$

5. $\int \cos(x)\,dx = \sin(x) + C$