Derivatives

1. $\frac{d}{dx}\left(x^r\right) = rx^{r-1}$
2. $\frac{d}{dx}\left(e^x\right) = e^x$
3. $\frac{d}{dx}\left(\ln|x|\right) = \frac{1}{x}$
4. $\frac{d}{dx}\left(\sin(x)\right) = \cos(x)$
5. $\frac{d}{dx}\left(\cos(x)\right) = -\sin(x)$
6. $\frac{d}{dx}\left(\tan(x)\right) = \sec^2(x)$
7. $\frac{d}{dx}\left(\csc(x)\right) = -\csc(x)\cot(x)$
8. $\frac{d}{dx}\left(\sec(x)\right) = \sec(x)\tan(x)$
9. $\frac{d}{dx}\left(\cot(x)\right) = -\csc^2(x)$
10. $\frac{d}{dx}\left(\sin^{-1}(x)\right) = \frac{1}{\sqrt{1-x^2}}$
11. $\frac{d}{dx}\left(\cos^{-1}(x)\right) = \frac{-1}{\sqrt{1-x^2}}$
12. $\frac{d}{dx}\left(\tan^{-1}(x)\right) = \frac{1}{1+x^2}$
13. $\frac{d}{dx}\left(\sec^{-1}(x)\right) = \frac{1}{x\sqrt{x^2-1}}$
14. $\frac{d}{dx}\left(\csc^{-1}(x)\right) = \frac{-1}{x\sqrt{x^2-1}}$
15. $\frac{d}{dx}\left(\cot^{-1}(x)\right) = \frac{-1}{1+x^2}$

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. $\int \cos(x)\,dx = \sin(x) + C$
6. $\int \sec^2(x)\,dx = \tan(x) + C$
7. $\int \csc^2(x)\,dx = -\cot(x) + C$
8. $\int \sec(x)\tan(x)\,dx = \sec(x) + C$
9. $\int \csc(x)\cot(x)\,dx = -\csc(x) + C$
10. $\int \frac{1}{\sqrt{1-x^2}}\,dx = \sin^{-1}(x) + C;\ a > 0$
11. $\int \frac{1}{1+x^2}\,dx = \tan^{-1}(x) + C$