

Evaluate the following

1. $\frac{d}{dx} \arcsin(\ln(x))$

2. $\frac{d}{dx} \arctan(\sec(x^3))$

3. $\int \frac{x+3}{\sqrt{1-(x^2+6x)^2}} dx$

4. $\int \frac{\sin(4x)}{1+\cos(4x)^2} dx$

5. $\int \frac{e^x}{1+e^{2x}} dx$

6. $\int \frac{e^x}{1+e^x} dx$