

$$1. \int x^n dx$$
$$\begin{cases} \frac{x^{n+1}}{n+1} & \text{for } n \neq -1 \\ \log(x) & \text{otherwise} \end{cases}$$

$$2. \int e^x dx$$
$$e^x$$

$$3. \int \sin(x) dx$$
$$-\cos(x)$$

$$4. \int \cos(x) dx$$
$$\sin(x)$$

$$5. \int \tan(x) dx$$
$$-\log(\cos(x))$$

$$6. \int \sin(ax) dx$$



$$\begin{cases} -\frac{\cos(ax)}{a} & \text{for } a \neq 0 \\ 0 & \text{otherwise} \end{cases}$$

$$7. \int \log(x) dx$$

$$x \log(x) - x$$

$$8. \int \frac{1}{a^2+x^2} dx$$

$$\frac{\frac{i \log(-ia+x)}{2} + \frac{i \log(ia+x)}{2}}{a}$$

