Integration By Parts April 20, 2021

 $1 \mid \int \ln x dx$ 

$$\int \ln x dx = \int 1 \ln x dx$$

$$= x \ln x - \int x \frac{1}{x} dx$$

$$= x \ln x - \int 1 dx$$

$$= x \ln x - x$$

 $2 \mid \int \tan^- x dx$ 

$$\int \tan^{-} x dx = x \tan^{-} x - \int x \frac{1}{x^2 + 1} dx$$
$$= x \tan^{-} x - \int \frac{du}{u}$$

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