```
17). |X \sin X \cos X dX = \pm |X \sin X dX = - \mp |X (\omega \cos X)' dX
    |x| = |x| 
                                                                                                                                                                                                                                                                                                                                                                                             = -4(XWS)X- (WS)XdX)
                                                                                                                        = Xsinx + LOSX +C
                                                                                                                                                                                                                                                                                                                                                                                                 = - 在(XLOS2X - 长in2X)+C
    12) \int \ln x dx = \int x' \ln x dx = x \ln x - \int x d\ln x
                                                                                                                                                                                                                                                                                                           (8). \int x f'(x) dx = \int x (f(x)) dx = x f(x) - \int f(x) dx
                                                                                                          =XInX-SX·XdX
                                                                                                                                                                                                                                                                                                                                                                                                                               =Xf(x)-f(x)+C
                                                                                                            = X/nX - X + C
                                                                                                                                                                                                                                                                                                                         \int X \sin^2 X dX = \int X \frac{1 - LOSX}{S} dX
    13) |X'e^{x}dx = |X'(e^{x})'dx = X'e^{x} - |e^{x}.2xdx|
                                                                                                                                                                                                                                                                                                                                                                                       士(X(X-立sin)X)dX
                                                                                                               =X^{2}e^{x}-(e^{x}.2x-(e^{x}.2x)
                                                                                                                                                                                                                                                                                                                                                                            = ex(x=2x+2)+C
                                                                                                                                                                                                                                                                                                                                                                              = 立[x= ± Xsin)x - =xx+(元(052x)]+C
  14) Sarcsinx dx = [X'arcsinxdx = Xarcsinx - [X'- = dx
                                                                                                                                                                                                                                                                                                                                                                               = 1/x2 - 7/5mx - 8 LOS2X+C
                                                                                               = Xarcsinx + 17-X= +C
                                                                                                                                                                                                                                                                                                        (10), X(arctanx) dx
15) \int \frac{\ln(\ln x)}{x} dx = \int (\ln x)' \ln(\ln x) dx = \ln x \cdot \ln(\ln x) - \int \ln x \cdot \frac{\dot{x}}{\ln x} dx
= \ln x \cdot \ln(\ln x) - \ln x + C
                                                                                                                                                                                                                                                                                                                          = \int_{\mathbb{R}^{2}} (x^{2}) (\operatorname{arctan} x)^{2} dx = \frac{1}{2} \left[ x^{2} (\operatorname{arctan} x)^{2} - \int_{\mathbb{R}^{2}} 2\operatorname{arctan} x (1 - \frac{1}{2}x^{2}) dx \right]
                                                                                                                                                                                                                                                                                                                             = - X (arctanx) - (x'arctanxdx + [[arctanx)] dx
                                                                                                                                                                                                                                                                                                                             = \frac{1}{2}(\arctanx)^2 - (\times \arctanx - (\frac{1}{2}\arctanx) + \frac{1}{2}(\arctanx)^2 - \times \arctanx + \frac{1}{2}(\frac{1}{2}\times + \frac{1}{2}) + \frac{1}{2}(\arctanx)^2 - \times \arctanx + \frac{1}{2}(\frac{1}{2}\times + \frac{1}{2}) + \frac{1}{2}(\arctanx)^2 +
 (b) [e^{x}\cos x dx = ] \pm (e^{x})'\cos x dx = \pm (e^{x}\cos x + )e^{x}\sin x dx)
                                                                                                                                                                                                                                                                                                                -821 CENNEL CHINSELA + ITBIX BELLEVILLE
                                                                   NOD MOT & FREDERING = MARSO FREDRINGON
                                                                                                                                                                                                                                                                                                                               + & mext tons/ +C
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(11) In(X+V+X2)dX 14) (X2 arctanx dx = X' ln(X+VHX2)dX = X/n(X+\(\mathbb{H}X^2\)- $=\int (1-\frac{1}{1+x^2}) arctan x dx$  $= \chi /_n (\chi + \sqrt{\chi}) - \int_{-\infty}^{\infty} d\chi$ =  $(X-Arctanx)Arctanx - \int tar (X-Arctanx) \frac{1}{1+x^2} dX$ = $(X-Arctanx)Arctanx - \frac{1}{2}ln(HX^2) + \int \frac{Arctanx}{HX^2} dx$ = X/n(X+THX2) - (HX2 +C  $\frac{\left(\operatorname{arctanx}\right)^{2}}{\left(HX^{2}\right)^{2}}dx = \left(\operatorname{arctanx}\right)^{2} - \left(\frac{\operatorname{arctanx}}{HX^{2}}dx\right)$   $= > \int \frac{\operatorname{arctanx}}{HX^{2}} = \frac{1}{2}\left(\operatorname{arctanx}\right)^{2} + C$ (12) (XUSX X Sin3X X = \-X\frac{1}{5\mathbb{H}X}) dX XEAKCTAINX 11 XZ dX = XarctanX - = In(HXZ) - = (arctanX)+C 乙对于正整数1/22,建立In=∫SINXXX的递推公式 In=∫SIN™X·SINXXX 113). (sect Xdx = (tanx)' &C3Xdx = - Sinn X (wsx)'dx =  $tan x sec^3 x - 3 = tan x sec^4 sin x dx$ =>  $04 sec^5 x dx = tan x sec^3 x + 3 sec^3 x dx$ - -Sin" X LOSX + [LOSX (M) Sin" X LOSX dx = -Sin x Losx + ((-sinx)(n+)sin xdx = - Sin" x LOSX + (n-1) ( [Sin" x dx - [Sin" x dx)  $\begin{aligned}
& (\text{Sec}^3xdx) = \tan x \text{ sec} x - \int \tan x \frac{\sin x}{\cos x} dx \\
& = x_0 2 \int \text{sec}^3xdx = \tan x \text{ sec} x + \int \frac{\sin x}{\cos x} dx = \tan x \text{ sec} x + \ln |\sin x| + c.
\end{aligned}$ 整理可得 Tu = - 1/511/1×LOSX+1/1/2 図AIX U中可得 | sac+xdx = 古tanxsec3x+ 書tanxsecx + 書か/secx+tanx/+C