ИНТЕГРАЛДАР КЕСТЕСІ

1. $\int 0dx = C.$

2. $\int 1dx = x + C.$

3. $\int x^n dx = \frac{x^{n+1}}{n+1} + C, (n \neq -1).$

4. $\int \frac{dx}{x} = ln|x| + C, (x \neq 0).$

5. $\int a^x dx = \frac{a^x}{ln\, a} + C, (a > 0, a \neq 1).$

6. $\int e^x dx = e^x + C.$

7. $\int sin\, x\, dx = -cos\, x + C.$

8. $\int cos\, x\, dx = sin\, x + C.$

9. $\int \frac{dx}{cos^2 x} = tgx + C,$
$x \neq \frac{\pi}{2} + k\pi, k \in Z$

10. $\int \frac{dx}{sin^2 x} = -ctgx + C,$
$x \neq k\pi, k \in Z.$

11. $\int tgxdx = -ln|cos\, x| + C,$
$x \neq \frac{\pi}{2} + k\pi, k \in Z.$

12. $\int ctgxdx = ln|sin\, x|,$
$x \neq k\pi, k \in Z.$

13. $\int shxdx = chx + C.$

14. $\int chxdx = shx + C.$

15. $\int \frac{dx}{ch^2 x} = thx + C.$

16. $\int \frac{dx}{sh^2 x} = -cthx + C.$

17. $\int \frac{dx}{\sqrt{1-x^2}} = \begin{cases} arcsin\, x + C, \\ -arccos\, x + C. \end{cases}$

18. $\int \frac{dx}{1+x^2} = \begin{cases} arctgx + C, \\ -arcctgx + C. \end{cases}$

19. $\int \frac{dx}{\sqrt{a^2-x^2}} = \begin{cases} arcsin\frac{x}{a} + C, \\ -arccos\frac{x}{a} + C. \end{cases}$

20. $\int \frac{dx}{a^2+x^2} = \begin{cases} \frac{1}{a} arctg\frac{x}{a} + C, \\ -\frac{1}{a} arcctg\frac{x}{a} + C. \end{cases}$

21. $\int \frac{dx}{x^2-a^2} = \frac{1}{2a} ln\left|\frac{x-a}{x+a}\right| + C.$

22. $\int \frac{dx}{\sqrt{x^2 \pm \alpha}} =$
$= ln\left|x + \sqrt{x^2 \pm \alpha}\right| + C.$