25. $$\int_0^1 \ln(1+x)\frac{1-x^2}{(ax+b)^2}\frac{dx}{(bx+a)^2} = \frac{1}{a^2-b^2}\left\{\frac{1}{a-b}\left[\frac{a+b}{ab}\ln\left(a+b\right)-\frac{1}{a}\ln b-\frac{1}{b}\ln a\right]+ + \frac{4\ln 2}{b^2-a^2}\right\}$$

$\left[a>0,\quad b>0,\quad a^2\neq b^2\right]$ Лн (114)(13)

26. $$\int_0^\infty \ln(1+x)\frac{1-x^2}{(ax+b)^2}\cdot\frac{dx}{(bx+a)^2} = \frac{1}{ab\,(a^2-b^2)}\ln\frac{b}{a}$$

$\left[a>0,\quad b>0\right]$ Лн (139)(14)

27. $$\int_0^1 \ln(1+ax)\frac{1-x^2}{(1+x^2)^2}dx = \frac{1}{2}\frac{(1+a)^2}{1+a^2}\ln(1+a)-\frac{1}{2}\cdot\frac{a}{1+a^2}\ln 2-\frac{\pi}{4}\cdot\frac{a^2}{1+a^2}$$

$\left[a>-1\right]$ Би (114)(23)

28. $$\int_0^\infty \ln(a+x)\frac{b^2-x^2}{(b^2+x^2)^2}dx = \frac{1}{a^2+b^2}\left(a\ln\frac{b}{a}-\frac{b\pi}{2}\right)$$

$\left[a>0,\quad b>0\right]$ Би (139)(11)

29. $$\int_0^\infty \ln^2(a-x)\frac{b^2-x^2}{(b^2+x^2)^2}dx = \frac{1}{a^2+b^2}\left(a\ln\frac{a}{b}-\frac{b\pi}{2}\right)$$

$\left[a>0,\quad b>0\right]$ Би (139)(12)

30. $$\int_0^\infty \ln^2(a-x)\frac{x\,dx}{(b^2+x^2)^2} = \frac{1}{a^2+b^2}\left(\ln b-\frac{a\pi}{2b}+\frac{a^2}{b^2}\ln a\right)$$

$\left[a>0,\quad b>0\right]$ Би (139)(10)

6.542

1. $$\int_0^1 \frac{\ln(1\pm x)}{\sqrt{1-x^2}}\,dx = -\frac{\pi}{2}\ln 2\pm 2G$$ ГХ2(325)(20)

2. $$\int_0^1 \frac{x\ln(1\pm x)}{\sqrt{1-x^2}}\,dx = -1\pm\frac{\pi}{2}$$ ГХ2(325)(22c)

3. $$\int_{-a}^a \frac{\ln(1+bx)}{\sqrt{a^2-x^2}}\,dx = \pi\ln\frac{1+\sqrt{1-a^2b^2}}{2}$$ $\left[0\leqslant |b|\leqslant\frac{1}{a}\right]$

Би (145)(16, 17)и, ГХ2 (325)(21e)

4. $$\int_0^1 \frac{x\ln(1+ax)}{\sqrt{1-x^2}}\,dx = -1+\frac{\pi}{2}\cdot\frac{1-\sqrt{1-a^2}}{a}+\frac{\sqrt{1-a^2}}{a}\arcsin a \qquad \left[|a|\leqslant 1\right]$$

$$= -1+\frac{\pi}{2a}+\frac{\sqrt{a^2-1}}{a}\ln\left(a+\sqrt{a^2-1}\right) \qquad \left[a\geqslant 1\right]$$

ГХ2(325)(22)

5. $$\int_0^1 \frac{\ln(1+ax)}{x\sqrt{1-x^2}}\,dx = \frac{1}{2}\arcsin a\,(\pi-\arcsin a) = \frac{\pi^2}{8}-\frac{1}{2}(\arccos a)^2$$

$\left[|a|\leqslant 1\right]$ Би (120)(4), ГХ2 (325)(21a)