11. $$\int_0^{\pi/2} x^m \cos x \, dx = \sum_{k=0}^{\lfloor m/2 \rfloor} (-1)^k \frac{m!}{(m-2k)!} \left(\frac{\pi}{2}\right)^{m-2k} + (-1)^{\lfloor m/2 \rfloor} \left(2\left\lfloor \frac{m}{2}\right\rfloor - m\right) m!$$

ГХ2 (333)(9c)

12. $$\int_0^{2n\pi} x^m \cos kx \, dx = -\sum_{j=0}^{m-1} \frac{j!}{k^{j+1}} \binom{m}{j} (2n\pi)^{m-j} \cos \frac{j+1}{2}\pi$$ Би (226)(2)

3.762

1. $$\int_0^{\infty} x^{\mu-1} \sin(ax) \sin(bx) \, dx = \frac{1}{2}\cos\frac{\mu\pi}{2}\Gamma(\mu)\left[|b-a|^{-\mu} - |b+a|^{-\mu}\right]$$

$$[a > 0, \quad b > 0, \quad a \ne b, \quad -2 < \operatorname{Re}\mu < 1]$$

(при $\mu = 0$ см. 3.741 1, при $\mu = -1$ см. 3.741 3)

Би(149)(7), БЭ1 I 321(40)

2. $$\int_0^{\infty} x^{\mu-1} \sin(ax) \cos(bx) \, dx = \frac{1}{2}\sin\frac{\mu\pi}{2}\Gamma(\mu)\left[|a+b|^{-\mu} + |a-b|^{-\mu}\operatorname{sign}(a-b)\right]$$

$$[a > 0, \quad b > 0], \quad |\operatorname{Re}\mu| < 1$$ (при $\mu = 0$ см. 3.741 2)   Би(159)(8)и, БЭ1 I 321(41)

3. $$\int_0^{\infty} x^{\mu-1} \cos(ax) \cos(bx) \, dx = \frac{1}{2}\cos\frac{\mu\pi}{2}\Gamma(\mu)\left[|a+b|^{-\mu} + |a-b|^{-\mu}\right]$$

$$[a > 0, \quad b > 0, \quad 0 < \mathbf{Re}\,\mu < 1]$$

БЭ1 I 20(17)

3.763

1. $$\int_0^{\infty} \frac{\sin(ax)\sin(bx)\sin(cx)}{x^\nu}dx = \frac{1}{4}\cos\frac{\nu\pi}{2}\Gamma(1-\nu)\Big\{(c+a-b)^{\nu-1} - (c+a+b)^{\nu-1} -$$
$$- |c-a+b|^{\nu-1}\operatorname{sign}(a-b-c) + |c-a-b|^{\nu-1}\operatorname{sign}(a+b-c)\Big\}$$

$$[c > 0, \quad 0 < \operatorname{Re}\nu < 4, \quad \nu \ne 1, 2, 3, \quad a \ge b > 0]$$ ГХ2 (333)(26а)и, БЭ1 I 79(13)

2. $$\int_0^{\infty} \frac{\sin(ax)\sin(bx)\sin(cx)}{x} \, dx = 0, \qquad\qquad [c < a - b \text{ и } c > a + b]$$
$$= \frac{\pi}{8}, \qquad\qquad [c = a - b \text{ и } c = a + b]$$
$$= \frac{\pi}{4}, \qquad\qquad [a - b < c < a + b]$$
$$[a \ge b > 0, \quad c > 0]$$ Фх II 645

3. $$\int_0^{\infty} \frac{\sin(ax)\sin(bx)\sin(cx)}{x^2}dx = \frac{1}{4}(c+a+b)\ln(c+a+b) -$$
$$- \frac{1}{4}(c+a-b)\ln(c+a-b) - \frac{1}{4}|c-a-b|\ln|c-a-b| \times$$
$$\times\operatorname{sign}(a+b-c) + \frac{1}{4}|c-a+b|\ln|c-a+b|\operatorname{sign}(a-b-c)$$

$$[a \ge b > 0, \quad c > 0]$$ Би (157)(8)и, БЭ1 79(11)