! For an efficient use of these tables, first read `HowTo.pdf`.

T2.33A. Integrands involving exponentials and rational functions on the interval $(0, y)$.

1. $$\int_0^y x^n e^{-\mu x}\,dx = \frac{n!}{\mu^{n+1}} - e^{-y\mu}\sum_{k=0}^{n}\frac{n!}{k!}\,\frac{y^k}{\mu^{n-k+1}} = \mu^{-n-1}\,\gamma(n+1,\mu y),$$
$$y > 0,\ \Re\{\mu\} > 0,\ n = 0, 1, 2, \ldots.$$

2. $$\int_0^y x e^{-\mu x}\,dx = \frac{1}{\mu^2} - \frac{1}{\mu^2}e^{-\mu y}(1+\mu y), \quad y > 0.$$

3. $$\int_0^y x^2 e^{-\mu x}\,dx = \frac{2}{\mu^3} - \frac{1}{\mu^3}e^{-\mu y}(2 + 2\mu y - \mu^2 y^2), \quad y > 0.$$

4. $$\int_0^y x^3 e^{-\mu x}\,dx = \frac{6}{\mu^4} - \frac{1}{\mu^6}e^{-\mu y}(6 + 6\mu y + 3\mu^2 y^2 + \mu^3 y^3), \quad y > 0.$$

5. $$\int_0^y \frac{e^{-\mu x}\,dx}{x+\beta} = e^{\mu\beta}[\mathrm{Ei}\,(-\mu y - \mu\beta) - \mathrm{Ei}\,(-\mu\beta)], \quad |\arg\beta| < \pi.$$
