2.6 $\int_{-1}^{3} \sqrt[3]{x}\,dx = \int_{-1}^{3} x^{\frac{1}{3}} dx = \frac{\sqrt[3]{3^4}}{\frac{4}{3}} - \frac{\sqrt[3]{(-1)^4}}{\frac{4}{3}} =$

$= \frac{9\sqrt[3]{3}}{4} - \frac{3}{4}$

№2,7 $\int_{\frac{1}{\sqrt{3}}}^{\sqrt{3}} \frac{dx}{1+x^2} = \operatorname{arctg} x \Big|_{\frac{1}{\sqrt{3}}}^{\sqrt{3}} =$

$= \operatorname{arctg}\sqrt{3} - \operatorname{arctg}\frac{1}{\sqrt{3}} = \frac{\pi}{6} - \frac{1}{\sqrt{3}}$

№2,35 $\int_{0}^{\pi} x \sin x\,dx = \left[\begin{matrix} u = x \\ du = dx \end{matrix}\right.$ $\quad dv = \sin x$ $\quad v = \int \sin x = -\cos x$

$= -x\cos x \Big|_0^{\pi} + \int_0^{\pi} -\cos x\,dx = (-\pi\cos\pi - 0)\cdot$

$\cdot\left(-\sin x \Big|_0^{\pi}\right) = (-\pi\cos\pi) - (\sin\pi - \sin 0)$

№2,15 $\int_0^1 x^{15}\sqrt{1+3x^8}\,dx =$

$\left[\begin{matrix} 1+3x^8 = t;\ 24x^7 dx = 2t\,dt = \frac{t\,dt}{12} \\ \begin{array}{c|c|c} x & 0 & 1 \\ \hline t & 1 & 2 \end{array} \quad 3x^8 = t^2 - 1 \\ x^8 = \frac{t^2-1}{3} \end{matrix}\right] =$

$= \int_1^2 \frac{t^2-1}{3} \cdot t \cdot \frac{t\,dt}{12} = \frac{1}{36}\int_1^2 (t^4 - t^2)\,dt =$

$= \frac{1}{36}\left(\frac{32}{5} - \frac{8}{3} - \frac{1}{5} + \frac{1}{3}\right) = \frac{1}{36}\left(\frac{31}{5} - \frac{7}{3}\right) = \frac{29}{270}$