2. $\int \frac{dx}{2-3x} = -\frac{1}{3}\int \frac{d(2-3x)}{2-3x} =$

$= -\frac{1}{3}\ln(2-3x) + C$

$\int x\cdot\sqrt{1-x^2}\,dx = -\frac{1}{2}\int\sqrt{1-x^2}\,d(1-x^2) =$

$= -\frac{1}{2}\int (1-x^2)^{1/2} d(1-x^2) = -\frac{1}{\cancel{2}}\cdot\frac{1}{3/\cancel{2}}\cdot(1-x^2)^{3/2} + C =$

$= -\frac{1}{3}\sqrt{(1-x^2)^3} + C$

$\int \sqrt[3]{x}\,\ln x\,dx = \left[\begin{array}{ll} \text{Берем интеграл по} & \\ \text{частям:} & \\ u = \ln x & dv = x^{\frac{1}{3}}dx \\ du = \frac{1}{x}dx & v = \frac{3}{4}x^{\frac{4}{3}} \end{array}\right] =$

$\int u\,dv = u\cdot v - \int v\,du$

$= \frac{3}{4}\ln x\cdot\sqrt[3]{x^4} - \frac{3}{4}\int\frac{x^{4/3}}{x}dx =$

$= \frac{3}{4}\ln x\sqrt[3]{x^4} - \frac{3}{4}\int x^{\frac{1}{3}}dx = \frac{3}{4}\ln x\sqrt[3]{x^4} - \frac{3}{4}\cdot\frac{1}{\frac{4}{3}}\cdot$

$\cdot x^{4/3} + C = \frac{3}{4}\ln x\cdot\sqrt[3]{x^4} - \frac{9}{16}x^{\frac{4}{3}} + C =$

$= \frac{3}{4}\ln x\sqrt[3]{x^4} - \frac{9}{16}\sqrt[3]{x^4} + C$