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Rewrite each definite integral in terms of u and du and then evaluate the resulting definite integral	1. $\int_2^3 \sqrt{4x-5}\,dx$ Let u = 4x - 5 $\frac{du}{dx}=4$ $\frac{du}{4}=dx$ $\int_3^7 \sqrt{u}\,dx$ $\int_3^7 \sqrt{u}\,\frac{du}{4} = \frac{1}{4}\int_3^7 u^{1/2}\,du = \frac{1}{4}\left[\frac{2}{3}u^{3/2}\right]_3^7$ $= \frac{1}{4}\left[\frac{2}{3}(7)^{3/2} - \frac{2}{3}(3)^{3/2}\right]$
$\frac{1\cancel{x^2}}{3\cancel{x^2}}$	2. $\int_0^1 \frac{x^2\,dx}{\sqrt{x^3+4}}$ Let $u = x^3 + 4$ $\frac{du}{dx}=3x^2$ $\frac{du}{3x^2}=dx$ $\int_4^5 \frac{x^2}{\sqrt{u}}\,dx$ $\int_4^5 \frac{x^2}{\sqrt{u}}\frac{du}{3x^2} = \frac{1}{3}\int_4^5 u^{-1/2}\,du = \frac{2}{3}u^{1/2}\Big]_4^5$ $= \frac{2}{3}\sqrt{5} - \frac{2}{3}\sqrt{4}$

	3. $\int_{\pi/2}^{\pi} (\cos^{10} x)(\sin x)\,dx$ Let u = cosx $\frac{du}{dx} = -\sin x$ $\frac{du}{-\sin x} = dx$ $\int_0^{-1} u^{10} \sin x\,dx$ $-\int_{-1}^{0} u^{10} \sin x \frac{du}{-\sin x} = \int_{-1}^{0} u^{10}\,du = \frac{1}{11}u^{11}\Big]_{-1}^{0} = 0 + \frac{1}{11} = \frac{1}{11}$ 4. $\int_0^{\pi/2} \cos x\sqrt{\sin x}$ Let u = sinx $\boxed{\frac{du}{dx} = \cos x}$ $\cancel{du = dx}$ $\int_0^1 \cos x\,(u)^{1/2}\,dx$ $\int_0^1 \frac{du}{\cancel{dx}} (u)^{1/2} \cancel{dx} = \frac{2}{3}u^{3/2}\Big]_0^1 = \frac{2}{3}$

(7) $\int_0^1 x \sec^2(x^2)\,dx \qquad u = x^2$