Solution (#1306)

$$\int_0^{\pi/4} \cos 2x \; \mathrm{d}x = \frac{1}{2}. \qquad \int_0^{\pi} \sin^2 x \; \mathrm{d}x = \frac{\pi}{2}. \qquad \int_{-1}^{0} \tan(2x+1) \; \mathrm{d}x = 0. \qquad \int_0^{\pi/4} \tan^2 x \; \mathrm{d}x = 1 - \frac{\pi}{4}.$$