

$\frac{5+2}{3}$

$\neq \frac{1}{c}$

$$\int_1^h \frac{1+\sqrt{x}}{x^2} dx = \int_1^h \frac{1}{x^2} + \frac{\sqrt{x}}{x^2} dx = \int_1^h \frac{1}{x^2} + \frac{1}{x^{3/2}} dx =$$

$$= \int_1^h x^{-2} + x^{-3/2} dx = -x^{-1} + 2 \cdot x^{-1/2} \Big|_1^h = -\frac{1}{x} - \frac{2}{\sqrt{x}} \Big|_1^h =$$

$$= \left(-\frac{1}{h} - \frac{2}{\sqrt{h}}\right) - \left(-1 - \frac{2}{1}\right) = \left(-\frac{1}{h} - 1\right) - (-3) = -\frac{1}{h} + 2 = \frac{2h-1}{h}$$

$$\int_0^{\frac{\pi}{4}} (\sin x - \cos x)^2 dx = \int_0^{\frac{\pi}{4}} (1 - 2\sin x \cos x) dx = \int_0^{\frac{\pi}{4}} (1 - \sin 2x) dx = x + \frac{\cos 2x}{2} \Big|_0^{\frac{\pi}{4}} =$$

$$= \left(\frac{\pi}{4} + \frac{\cos \frac{\pi}{2}}{2}\right) - \left(0 + \frac{\cos 0}{2}\right) = \frac{\pi}{4} - \frac{1}{2}$$