$$
\begin{aligned}
\int_0^{\pi/2} 7\sin^2 x\,\cos^2 x\,dx &= 7\int_0^{\pi/2} \tfrac{1}{4}(4\sin^2 x\,\cos^2 x)\,dx \\
&= 7\int_0^{\pi/2} \tfrac{1}{4}(2\sin x\,\cos x)^2 dx \\
&= \tfrac{7}{4}\int_0^{\pi/2} \sin^2 2x\,dx = \tfrac{7}{4}\int_0^{\pi/2} \tfrac{1}{2}(1-\cos 4x)\,dx \\
&= \tfrac{7}{8}\int_0^{\pi/2} (1-\cos 4x)\,dx = \tfrac{7}{8}\big[x - \tfrac{1}{4}\sin 4x\big]_0^{\pi/2} \\
&= \tfrac{7}{8}\big(\tfrac{\pi}{2}\big) = \tfrac{7\pi}{16}
\end{aligned}
$$