$$\int (\tan^7 x)(\sec^5 x)\ dx.$$

$\tan^2 x = \sec^2 x - 1$

$$I \ = \ \int (\tan^7 x)(\sec^5 x)\ dx = \int (\tan x)(\sec x)(\sec^2 x - 1)^3 (\sec^4 x)\ dx$$

Seja $u = \sec x$, $du = (\tan x)(\sec x)dx$.

$$I \ = \ \int (u^2 - 1)^3 \cdot u^4\ du \ = \ \frac{u^{11}}{11} - \frac{u^9}{3} + \frac{3u^7}{7} - \frac{u^5}{5} + c$$

$$\boxed{\int (\tan^7 x)(\sec^5 x)\ dx \ = \ \frac{\sec^{11} x}{11} - \frac{\sec^9 x}{3} + \frac{3\sec^7 x}{7} - \frac{\sec^5 x}{5} + c}$$

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