10.

$$\int \tan^5(8x-1)\sec^4(8x-1)\,dx$$

$$\int \tan^5(8x-1)\underline{\sec^2(8x-1)}\ \underline{\sec^2(8x-1)}\,dx$$

SAVE

$$\int \tan^5(8x-1)\left(1 + \tan^2(8x-1)\right)\ \sec^2(8x-1)\,dx$$

$$\int \left(\tan^5(8x-1) + \tan^7(8x-1)\right)\sec^2(8x-1)\,dx$$

$$\int \left[(\tan(8x-1))^5 + (\tan(8x-1))^7\right]\sec^2(8x-1)\,dx$$

$$u = \tan(8x-1) \qquad du = \sec^2(8x-1)\cdot 8\,dx$$

$$\frac{1}{8}\int (u^5 + u^7)\,du$$

$$\frac{1}{8}\left[\frac{1}{6}u^6 + \frac{1}{8}u^8\right] + C$$

$$\boxed{\frac{1}{48}\tan^6(8x-1) + \frac{1}{64}\tan^8(8x-1) + C}$$