

$$4. \int \sqrt[5]{2+3x^2} \cdot \underline{(6x) dx}$$

$$u = \underline{2+3x^2} \quad du = \underline{(6x) dx}$$

$$= \int \sqrt[5]{u} du$$

$$= \int u^{\frac{1}{5}} du$$

$$= \frac{u^{\frac{1}{5}+1}}{\frac{1}{5}+1} + C$$

$$= \frac{u^{\frac{6}{5}}}{\frac{6}{5}} + C$$

$$= \frac{5}{6} u^{6/5} + C$$

$$= \boxed{\frac{5}{6} (2+3x^2)^{6/5} + C}$$

$$5. \int \frac{\underline{2x-1}}{\underline{(x^2-x)^3}} \underline{dx}$$

$$u = \underline{x^2-x} \quad du = \underline{(2x-1) dx}$$

$$= \int \frac{1}{\underbrace{u^3}} du$$

$$= \int u^{-3} du$$

$$= \frac{u^{-3+1}}{-3+1} + C$$

$$= \frac{u^{-2}}{-2} + C$$

$$= \frac{1}{-2u^2} + C$$

$$= \boxed{\frac{1}{-2(x^2-x)^2} + C}$$