

Let $u = x^5 + 35x^3 + 20x$, so that $du = (5x^4 + 105x^2 + 20)dx$
 $= 5(x^4 + 21x^2 + 4)dx$. Then

$$\int \frac{x^4 + 21x^2 + 4}{x^5 + 35x^3 + 20x} dx = \int \frac{1}{u} \left(\frac{1}{5} du \right) = \frac{1}{5} \ln |u| + C$$
$$= \frac{1}{5} \ln |x^5 + 35x^3 + 20x| + C$$