$\int \frac{1}{\left[(x-1)^3(x+2)^5\right]^{1/4}} dx.$

Answer: $I = \int \frac{1}{\left(\frac{x-1}{x+2}\right)^{3/4}(x+2)^2}$

Let $\frac{x-1}{x+2} = t$ or $\frac{3dx}{(x+2)^2} = dt$

$\therefore I = \frac{1}{3}\int \frac{1}{t^{3/4}} dt$

$= \frac{1}{3}\left(\frac{t^{1/4}}{1/4}\right) + C$

$= \frac{4}{3}t^{1/4} + C$

$= \frac{4}{3}\left(\frac{x-1}{x+2}\right)^{1/4} + C$