$$\int_0^1 \frac{69}{x^5}\,dx = \lim_{t\to 0^+}\int_t^1 69x^{-5}\,dx = \lim_{t\to 0^+}\left[-\frac{69}{4x^4}\right]_t^1$$
$$= -\frac{69}{4}\lim_{t\to 0^+}\left(1-\frac{1}{t^4}\right) = \infty. \qquad \text{Divergent}$$