

$$\begin{aligned}\int_6^8 \frac{92}{(x-6)^3} dx &= \lim_{t \rightarrow 6^+} \int_t^8 92(x-6)^{-3} dx = \lim_{t \rightarrow 6^+} [-46(x-6)^{-2}]_t^8 \\ &= -46 \lim_{t \rightarrow 6^+} \left[\frac{1}{2^2} - \frac{1}{(t-6)^2} \right] = \infty. \quad \text{Divergent}\end{aligned}$$