

1. $\int_0^1 \frac{1}{x^2} dx = \lim_{t \rightarrow 0^+} \int_t^1 \frac{1}{x^2} dx$
 $= \lim_{t \rightarrow 0^+} \left[-\frac{1}{x} \right]_t^1 = \lim_{t \rightarrow 0^+} \left(-1 + \frac{1}{t} \right) = \infty$

Perf possibly
to 2256'