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$$\int_0^3 \frac{dx}{(3-x)^{3/2}} = \int_0^{\infty} (3-x)^{-3/2} dx$$

$$\lim_{R \rightarrow 3} +2(3-x)^{-1/2} \Big|_0^R = \frac{2}{(3-R)^{1/2}} - \frac{2}{(3-0)^{1/2}}$$

$\rightarrow \infty + \text{diverges}$