Exercise sheet 1 for Math 263: ODEs for Engineers Matt Roberts
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Solve the following ODEs:

1. $y' = \frac{1}{x(e-1-x)}$, $x > e-1$, $y(e) = \frac{1}{e-1}$.
2. $y' = y \cot x$, $x \in (0, \pi)$, $y\left(\frac{\pi}{2}\right) = 1$.
3. $y' = \left(\tan x - \frac{1}{x}\right) y + 2 \sec x$, $x \in \left(\frac{3\pi}{2}, \frac{5\pi}{2}\right)$, $y(2\pi) = 0$.

If you spot any errors, please inform me: `matthew.roberts@mcgill.ca`