

### Problem 18.30

18.30) Show that the time constant has units of seconds?

1.

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$$\begin{aligned}\tau &= RC \\ &\Rightarrow (\Omega)(F) \\ &\Rightarrow \left(\frac{\cancel{\text{volts}}}{\text{amp}}\right)\left(\frac{\text{coulombs}}{\cancel{\text{volt}}}\right) \\ &\Rightarrow \left(\frac{\cancel{\text{coulombs}}}{\cancel{\text{coulombs}}/\text{second}}\right) \\ &\Rightarrow \text{seconds}\end{aligned}$$

2.