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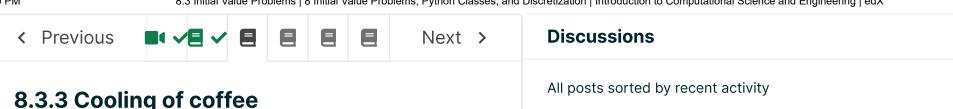
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## 8.3.3 Cooling of coffee

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MO2.4

For the coffee cooling example in Section <u>8.2.3</u>, dividing Equation (8.16) by  $m_c c_c$  gives

$$\frac{\mathrm{d}T_c}{\mathrm{d}t} = \frac{hA}{m_c c_c} (T_{\mathrm{out}} - T_c) \tag{8.40}$$

which in terms of the general IVP form gives a scalar ( M=1) system of equations with

$$u = T_{\text{cut}} - f = \frac{hA}{(T_{\text{cut}} - u)} \tag{8.41}$$

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