MITx CSE.0002x
Introduction to Computational Science and Engineering

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8.3.4 Water emptying from a tank

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MO2.4

For the water tank example in Section 8.2.5, dividing Equation (8.24) by A_t gives

$$\frac{\mathrm{d}h}{\mathrm{d}t} = -\frac{A_o}{A_t}\sqrt{2gh} \tag{8.42}$$

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

$$u = h, \quad f = -\frac{A_o}{A_t}\sqrt{2gu} \tag{8.43}$$

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