

Addendum to the Solution of Review # 1

The solution to the problem

$$y' = x^3(1 - y), \quad y(0) = 3$$

actually is

$$\frac{dy}{1 - y} = x^3 dx$$

$$-\ln|1 - y| = \frac{x^4}{4} + c$$

$$1 - y = ke^{-x^4/4}$$

$$k = -2 \quad (\text{because } y(0) = 3) \rightarrow y = 2e^{-x^4/4} + 1.$$