Problem 1B.3

Viscosity of suspensions. Data of Vand\textsuperscript{3} for suspensions of small glass spheres in aqueous glycerol solutions of ZnI\textsubscript{2} can be represented up to about $\phi = 0.5$ by the semiempirical expression

$$\frac{\mu_{\text{eff}}}{\mu_0} = 1 + 2.5\phi + 7.17\phi^2 + 16.2\phi^3 + \cdots$$

(1B.3-1)

Compare this result with Eq. 1.6-2.

Answer: The Mooney equation gives a good fit of Vand’s data if $\phi_0$ is assigned the very reasonable value of 0.70.