1a. S&D 4.3. Where the problem states “sound velocities in solids are $10^5$–$10^6$ cm/s,” I understand the quoted range to apply to the long-wavelength limit. *Note: this problem does not involve any computer simulation.*

1b. By taking the limits $K \to \infty$, $a \to 0$, $m \to 0$, while preserving density $\rho = m/a$ and tension $T = Ka$, reproduce from Silsbee and Dräger equation 4.2 the well-known dispersion relation for transverse waves on a linear string (or, if you prefer, for longitudinal waves in a gas column). (Check your answer against any first-year undergraduate physics textbook, *e.g.*, Halliday and Resnick.) In what qualitative way does the continuum dispersion relation differ from that of the discrete?

2a. S&D 4.36.

2b. Would question 2a come up in the continuum limit of question 1b? Why or why not?

3. A&M 22.3.