- **1.** Text, 4.12
- **2.** Text, 4.17
- **3.** Consider the equation

$$u_t + au_x - bu_{xxx} = 0$$

where $x \in \mathbb{R}$. Suppose at t = 0, $u(x, t) = e^{ikx}$. Find a solution of the differential equation. Describe the solution as a traveling wave. What is the speed of the wave? How does the speed change as we change the spatial frequency k?

Due: April 5, 2019