Boas Chapter 13:
2.3, 2.5, 2.6, 2.7, 2.10, 2.11, 2.16,
In addition, in problem 2.10 find the exact value for T(5,5) using symmetry, and ideas from problems 2.11 and 2.16. Your answer should not be an infinite series.

Additional problem:

1. Consider the equation for a damped string

\[
\frac{\partial^2 y}{\partial x^2} = \frac{1}{V^2} \frac{\partial^2 y}{\partial t^2} + \nu \frac{\partial y}{\partial t}
\]

The string is initially held at rest with the shape \(y(x, t = 0) = \sin(\frac{x}{l}) + \sin(\frac{100\pi x}{l})\). Also the ends of the string are fastened at \(x = 0\) and \(x = l\), so that \(y(x = 0, t) = y(x = l, t) = 0\). Calculate \(y(x, t)\). Don’t worry too much about expressing your final answer in terms of real functions, as this will vary over the values of parameters \(V\) and \(\nu\) chosen. But please comment on the analogy of this problem to overdamped and underdamped motion, and the regimes where each kind of motion will occur. *Hint: Read Chapter 13 section 4*