PARTIAL DIFFERENTIAL EQUATIONS
SPRING 2015

SUGGESTIONS FOR 3.8.9

Suggestion 1. Show that the separated equations obtained are identical to those for case (B) from class, except that the boundary condition on Y is changed to $Y(b) = 0$.

Suggestion 2. Use the solution for X given in class. When solving the Y equation, express the solution using hyperbolic functions.

Suggestion 3. The boundary condition on Y should take the form $A\,r(b) + B\,s(b) = 0$ (for some functions r and s). At this point it is convenient to choose $A = s(b)$ and $B = -r(b)$.

Suggestion 4. The identity $\sinh(\alpha \pm \beta) = \sinh(\alpha)\cosh(\beta) \pm \sinh(\beta)\cosh(\alpha)$ may be helpful.