

MTH 621/Peszynska/Fall 2015, Assignment 4

1. We have used the method of Separation of Variables (SOV) to solve the (\*) linear PDEs (diffusion or the wave equations) with constant coefficients, and very simple boundary conditions. Propose four examples that extend (\*), two of which such that SOV will work, and another two for which it won't work. Make sure they are qualitatively different, and do not all follow one specific pattern. Explain.
2. Solve 5-1-13.
3. Solve 5-3-1.
4. **Extra practice:** Solve one or more of 4-2-5, 4-2-3, 4-2-8
5. **Extra practice:** Solve 5-1-3 and 5-1-4.