

MATH 401, HW 4, FALL 2015

1. Textbook, Section 2.1, Exercise 3 (5 pts).
2. Textbook, Section 2.2, Exercise 7 (5 pts).
3. Textbook, Section 2.2, Exercise 14 (5 pts).
4. Consider the graph from Example 2.22 in Section 2.3 in your textbook. Let $e_1 = 2, e_2 = 0, e_3 = 3, e_4 = 2, e_5 = 3, e_6 = 2, e_7 = 1, e_8 = 0$. Compute the graph Laplacian (i.e., 2nd derivative matrix) for this graph. Apply it to vectors $(0, 0, 0, 1, 0, 0)$ and $(1, 1, 1, 0, 1, 1)$.

Please do NOT use Matlab for this HW.