Homework Problems III
PHYS 425: Electromagnetism I

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1. Griffiths Problem 3.2

2. Griffiths Problem 3.9

3. Griffiths Problem 3.14

4. Griffiths Problem 3.19

5. Griffiths Problem 3.25

6. Griffiths Problem 3.18 (Extra Credit) This problem has general 3-D solution to Laplace's Equation of

$$\sum_{m=1}^{\infty}\sum_{n=1}^{\infty} A_{m,n}\sin\left(m\pi x/a\right)\sin\left(n\pi y/a\right)\sinh\left(\sqrt{m^2+n^2}\,\pi z/a\right)$$

which automatically solves the boundary conditions given in Figure 3.23. Why? The rest of the solution follows the methods of Example 3.5.