

MATH2011 Assignment 5, MATH2100 Assignment 10

1. Find the steady-state temperature distribution $u(x, y)$ in the square $0 \leq x \leq 2$, $0 \leq y \leq 2$ if the lower side is kept at a temperature $u = \sin \frac{\pi x}{2}$ and $u = 0$ on the other three sides.
2. Find the steady-state temperature $u(x, y)$ in the strip $0 \leq x \leq \pi$, $y > 0$ with the vertical sides perfectly insulated, $u(x, y)$ bounded as $y \rightarrow \infty$ and the lower side kept at temperature x . (*Do from first principles, don't use Laplace transform!*)
3. Kreyszig Set 4.5, p.226, Q.4.
4. Kreyszig Set 11.10, p.635, Q11; Q12 (BONUS), Q13; Q14 (BONUS).