

Integrable Systems: Assessment 2

AMH2: Applied Mathematics Honours

Semester 2, 2017

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Due 9am Tuesday 22 August 2017

Submit scanned or typeset answers to TurnItIn on LMS Blackboard.
Bring your hardcopy to Lecture at 2pm.

1. Find the scattering data for the following potential $u(x)$:

$$u(x) = \begin{cases} \alpha, & -1 < x < 1; \\ 0, & \text{otherwise.} \end{cases}$$

α is a given real constant.

Hint: assume that the eigen-functions are continuously differentiable.