

MTH 623/Peszynska/Spring 2012

Worksheet 3.

Please show all your work. Use proper mathematical notation.

1. Consider an IVP problem for

$$u_t + uu_x = 0,$$

with Riemann initial data $u_0(x) = H(x)$. Show directly that the rarefaction solution is a weak solution.

2. (EXTRA) Find the (physical) solution to

$$u_t + uu_x = 0$$

with “box” initial data.