

University of Colorado
Department of Mathematics

2022/23 Semester 1

Math 6310 Real Analysis 1

Assignment 2

Due Wednesday, September 21, 2022, 11:59 p.m., uploaded to Canvas

1. Do Royden–Fitzpatrick p. 34, #6, 7 pp. 39–40, #13(i), (ii), 14; p. 43, #16, 17; pp. 47 #25, 28 .
2. Do problem #18 p. 43 of the Royden Fitzpatrick book. If you have the latest printing of the Fourth Edition, the problem is correctly stated. If you have an earlier printing or the pdf file of the book, the problem could be incorrect as stated. Please do the following correct version of that problem:
Let $E \subset \mathbb{R}$ have finite outer measure. Show that there is a G_δ set G for which $E \subseteq G$ and $m^*(E) = m(G)$. Use this to show that E is measurable if and only if there is an F_σ set, F , for which $F \subseteq E$ and $m(F) = m^*(E)$.