

Problem Set 8

D. Zack Garza

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Contents

1	Problem 1	1
1.1	Part a	1
1.2	Part b	2
1.3	Part c	2
2	Problem 2	2
3	Problem 3	2
4	Problem 4	2
5	Problem 5	2
6	Problem 6	2

1 Problem 1

1.1 Part a

It follows from the definition that $\|f\|_\infty = 0 \iff f = 0$ almost everywhere, and if $\|f\|_\infty$ is the best upper bound for f almost everywhere, then $\|cf\|_\infty$ is the best upper bound for cf almost everywhere.

So it remains to show the triangle inequality. We have

1.2 Part b

1.3 Part c

2 Problem 2

3 Problem 3

4 Problem 4

5 Problem 5

6 Problem 6