

Fall, 2014

MATH 3500(H)
PROBLEM SET #5

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DUE Wednesday, September 24, 2014.

Problems to work but not hand in:

§2.3: #8a,b,c,d,e, 10a.

Problems to turn in:

No WeBWork this week.

§2.2: #7b* (3), 8 (4), 12[†] (3).

§2.3: #2 (2), 3 (3), 5[‡] (3), 8g,h[§];j[¶] (4), 9 (2).

Challenge problems (Turn in separately):

§2.2: #9 (3), 11 (3), 14 (4).

*Hint: You will need either a formula for $\mathbb{R}^n - (C \cup D)$ or, if you use the definition directly, the result of Exercise 6(a). Why?!

†Hint: Use the triangle inequality.

‡Hint: Apply the definition of continuity with a particular *choice* of $\varepsilon > 0$.

§Hint: What basic inequality do you know about $|\sin y|$ that controls the function for $|y|$ small?

¶Hint: What if $y = -x + g(x)$ where $g(x)$ is very small? Now figure out what to use for $g(x)$.