

# MATH 173 PROBLEM SET 3

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April 20, 2022

**Problem 1.** TODO

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***Solution.*** As the hint suggests,  $u' = 0$  means by definition  $u(\phi) = 0$  for any  $\phi \in C_c^\infty(\mathbb{R})$ . For any  $\psi \in C_c^\infty(\mathbb{R})$ , let  $\phi_0 \in C_c^\infty(\mathbb{R})$  be a bump function such that  $\int_{\mathbb{R}} \phi_0 = 1$ .  $\square$

**Problem 2.** TODO

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*Solution.* TODO

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**Problem 3.** TODO

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*Solution.* TODO

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**Problem 4.** TODO

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*Solution.* TODO

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**Problem 5.** TODO

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*Solution.* TODO

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**Problem 6.** TODO

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*Solution.* TODO

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**Problem 7.** TODO

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*Solution.* TODO

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