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Analysis I
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HW 3 [Revised 11 Sep]

Due: Sep 16 in class.

1. III.1.2

2. III.1.4

3. III.2.5. As the problem states, $x \sin(1/x)$ is an example of a function that is uniformly continuous but not Lipschitz on $[0, 1]$. Find a non-oscillatory example.

4. III.2.6

5. III.3.6

6. III.3.7

7. Find a function that is convex on $[0, 1]$ but is not continuous on $[0, 1]$.

8. If you were to present Theorem 3.3 (Taylor Series with Remainder) in class, write up the notes of what you would say.