MA121, Homework #1

due Thursday, Oct. 23 in class

1. Show that the set $A = \{x \in \mathbb{R} : |2x - 3| < 4\}$ has no minimum.

2. Show that the set $B = \{\frac{3n+1}{n+1} : n \in \mathbb{N}\}$ has a minimum but no maximum.

3. Show that the set $B = \{\frac{3n+1}{n+1} : n \in \mathbb{N}\}$ is such that $\sup B = 3$.

4. Determine $\max C$ when $C = \{y \in \mathbb{R} : y = 1 + x - x^2 \text{ for some } x \in \mathbb{R}\}$.

- You are going to work on these problems during your Friday tutorials.
- When writing up solutions, write legibly and coherently. Use words, not just symbols.
- Write both your name and your tutor's name on the first page of your homework.
- Your tutor's name is Stephen, if you are a TP student; otherwise, it is Pete.
- Your solutions may use any of the results stated in class (but nothing else).
- NO LATE HOMEWORK WILL BE ACCEPTED.