

This miniproject explores the idea of whether or not a set is well-defined.

- (a) Give a definition of a set that is intended to include well-educated people, but is not well-defined.
- (b) Give a definition of a set that is intended to include well-educated people, and which is well-defined.
- (c) Consider the set defined by:  $S = \{x | x \text{ is a set that does not contain itself}\}$ . Note that elements of  $S$  are themselves sets, so it is reasonable to ask the question of whether or not they contain themselves. Explain why  $S$  is not a well-defined set. (Hint: Determine whether or not  $S \in S$ .)