

### 18.099b Problem Set 1

*Due:* Thursday, February 18th (in class or before).

1. Suppose  $x$  is a real number greater than 1. Show that for every real number  $y$  there exists a positive integer  $n$  such that  $x^n > y$ .

(*Hint.* Use the least upper bound property of the real numbers: Every nonempty bounded set of real numbers has a least upper bound.)

2. Latex exercise.