Math F651: Homework 11 **Due: April 15**

1. Show that a countable product of sequentially compact spaces is sequentially compact.

2. Tychonoff's theorem implies $[0,1]^\omega$ is compact with the product topology and problem **1** implies it is sequentially compact as well. Determine if $[0,1]^\omega$ is compact or sequentially compact with the uniform and box topologies. The uniform topology on $[0,1]^\omega$ is given by the ℓ^∞ metric:

$$d(x,y) = \sup_i |x_i - y_i| .$$

3: Munkres 51.2.

4: Munkres 51.3.

5: Munkres 52.1.