

Name (Last, First): _____

Student ID: _____

Dror Bar-Natan: Classes: 2015-16: MAT 475 Problem Solving Seminar:

<http://drorbn.net/16-475>

Quiz 11 on April 7, 2016: “Consider Extreme Cases” and “Generalize”. You have 28 minutes to solve the following two problems. Please write on both sides of the page. **Good Luck!**

Problem 1. (Larson’s 1.11.7). Show that there exists a rational number c/d , with $d < 100$, such that $\lfloor k \frac{c}{d} \rfloor = \lfloor k \frac{73}{100} \rfloor$ for $k = 1, 2, \dots, 99$.

Problem 2 Evaluate the sum $\sum_{k=0}^{\infty} \frac{(k+1)^2}{k!}$.