

Quiz 7

(PrE 310)

Jacob
Boicken

1.) a.) $P(52, 52) = 52!$

b.) 2 of every card so it will double up \uparrow
 $P(104, 104) - P(52, 52)$

2.) $3 \times$ moves $4 \times$ moves
 Shortest is 7

$$\cdot \binom{7}{3} \cdot \binom{4}{4} = 35 \text{ possible paths}$$

3.) Worst Case:
 Each pigeon (#s 1-1000) are placed
 into their own holes.

Then, if each question removes one hole,
 it is possible to ask 999 until one
 hole and thus the number remains.