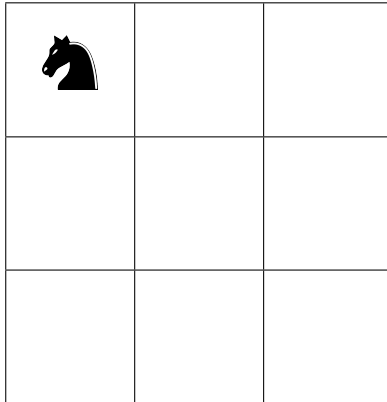
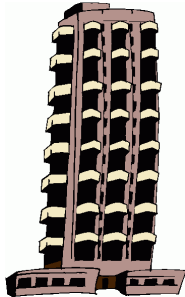


UW Math Circle
November 14, 2013
Week 8 Homework

1. Suppose a knight is placed in the upper left hand corner of the chess board shown below. Is it possible to move the knight to the center square of the chess board after some number of moves?



2. A new building in downtown Seattle has 9 floors. There is a stairwell that connects floor A to floor B as long as the two digit number AB is divisible by three. Is it possible to take the stairs from the first floor to the ninth floor?



3. In the far away land of Tripleland, three roads lead in/out of each city. Is it possible that there can be 100 cities in Tripleland?
4. In the neighboring land of Centropolis, 100 roads lead out of each city, and it is possible to travel along these roads from any city to any other. One of the roads is closed for repairs. Prove that it is still possible to get from any city to any other city.

