Well, you might have seen this before, it's a classic!

The towers of Hanoi:

Three diamond pins.
Seven gold discs, all of different radii.

Your goal: move the discs from pin 1 to pin 3 in the fewest possible number of moves.

Rules: Each move takes the top disc on one of the pins and moves it to another pin. You are not allowed to put a big disc on top of a little one!

Questions:
1. What is the fewest number of moves?
2. What is the first move?
3. Do the same if 64 discs instead of 7.