***Path Problem***

Ms. D’Amato likes to take a different route to work every day. She will quit her job the day she has to repeat her route. Her home and work are pictured in the grid of streets below.



A valid trip Another valid trip Not a valid trip

If Ms. D’Amato never backtracks (she only travels north or east), how many days will she work at this job?

How many more days can Ms. D’Amato work if she moves two blocks further away? Does it matter in which direction she moves?