



July, 2016 – Grades 3 & 4

Individual Questions (Part 3)

Total pages: 3, Total points: 40

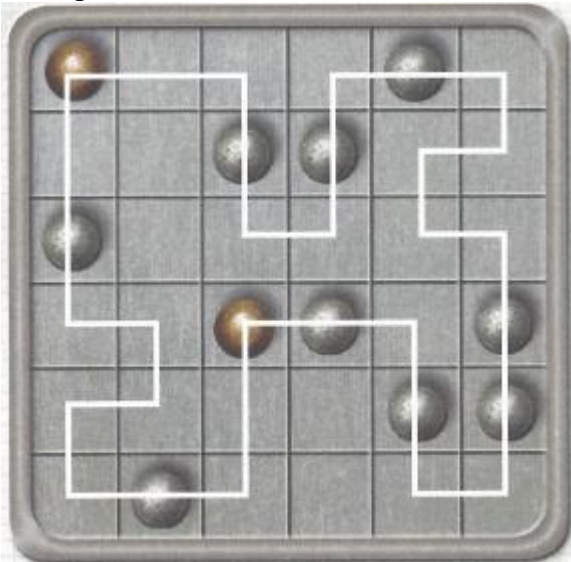
Time limit: 20 minutes

Name (Print): _____

Question #1 (8 points)

- (a) Run a single, unbroken wire around the grid that passes through each of the relays to complete the circuit.
- (b) The wire must enter and leave each square through the center of one of its four sides.
- (c) If the wire enters a gold relay, it must immediately turn 90 degrees left or right on that square. It must also pass straight through the square it came from and the square it leads to.
- (d) If the wire enters a silver relay, it must pass straight through the square. It must also turn left or right in the next and/or preceding square.

Example:



Question #2 (8 points)

Jack is a gifted athlete who has trained hard for the Olympic marathon. In the last hundred yards he finds the inner strength to increase his pace and overtakes the runner in the second place.

But then, with the finishing line just feet away, he is overtaken by two other runners...

What medal will Jack receive? Gold, Silver, or Bronze?



Question #3 (8 points)

Each morning the bagel seller buys his bagels at two cents each then sets off to make his deliveries. He arrives at Tesla's lab at midday and sells his last bagel for one dollar and fifty cents.

"You must be making a fortune," remarked Tesla.

"Not even close," said the bagel seller miserably, "you are my one and only customer."

On his way to Tesla's lab, the bagel seller must travel through the territories of three notorious street gangs. In each territory, he is forced to pay a tariff of half of the bagels he is carrying, plus two more, to the gang leader. How much profit does the bagel seller make each day after all?



Question #4 (8 points)

A group of eminent scientists meet in Vienna,
All but two of them are biologists.
All but two of them are chemists.
All but two of them are physicists.
How many scientists attend the conference?



Question #5 (8 points)

What is the maximum value of change that you can have in US coins (pennies, nickels, dimes, and quarters) without being able to give someone exact change for a one-dollar bill?