

Follow these instructions to find parts for your Magnetonomic Adjacency Detector. Whenever you find a part, mark its location on the map provided. Each location should fall on a vertex of the grid. Take only one copy of each part.

## Location 1

1. Your journey begins in Lobby 7.
2. Standing at the entrance from the street, find the word with the most V's and walk under it.
3. Walking directly forwards, proceed as straight as possible until you have gone up exactly 40 stairs.
4. Two signs in front of you have white text. Note the colors (\_\_\_\_\_, \_\_\_\_\_) of the backgrounds of these two signs.
5. Go through the door and to the left until you find a pipe with the two colors you noted.
6. Follow the pipe in the direction that it goes further.
7. Let  $n$  be the smallest positive digit (\_\_\_\_\_) in the number of the room closest to the end of the pipe.
8. Go down  $n$  flights of stairs, then proceed down the hallway until you encounter a vending machine.
9. Purchase the item with the most calories.
10. The location of your first Magnetonomic Adjacency Detector part is given by the % DV of carbohydrates followed by the number of g of carbohydrates in your item.

## Location 2

1. Put your hand on the wall in front of you and follow it either to your right or left (\_\_\_\_\_) whichever brings you to the alphabetically later lecture hall (by last name).
2. Go down a floor.
3. Follow the pipes in the direction they go further until they disappear into a wall.
4. Dispose of the item you purchased earlier in the appropriate receptacle, either the one on the right or the one on the left (\_\_\_\_\_).

5. Continue down the hallway, taking your first right and continuing until you reach a plaque with names on it.
6. In the first and fourth steps of this section you produced either the letter R or L. Reading down the plaque in chronological order, find the first name on the plaque that contains both of these letters in the correct order (not necessarily consecutively).
7. Find the next person on the plaque with the same middle initial.
8. The building number of your next location is the largest power of 2 among the digits to the right of this name. The room number is a permutation of the rest of the digits.

### Location 3

1. Proceed towards the anthropology display.
2. Note the color (\_\_\_\_\_) present furthest to the left in the main portion of this display.
3. Take the stairs ahead of you up to the next floor whose color scheme matches this color.
4. Walk down the hallway until you find a door that is numbered incorrectly.
5. Take the full number of that door. To find the room number of your next location, read the first occurrence of each digit. To find the building number, square the middle digit.

### Location 4

1. Proceed to your left down the corridor until you reach a vending machine.
2. Calculate the fewest number (\_\_\_\_\_) of drinks needed to make a combination which has exactly 5 cal/oz in total.
3. Take the elevator to the floor whose number is the same as the number you calculated above.
4. Exit the lobby you are in through the exit pointed to by the higher arrow.
5. Walk in that direction until you encounter an office.
6. Find the first name listed on this office.
7. Your next location is this person's other office.

## Location 5

1. Proceed to your right, entering the first classroom that you see.
2. Let  $n$  be the number of seats (\_\_\_\_\_) in the first row of this classroom.
3. Exit the classroom and continue walking in the same direction.
4. Once you encounter a map of MIT, count down to the  $n$ th entry in the first column under the map.
5. Your next location is this office.

## Location 6

1. Walk to your left until you find a set of black rubber gloves.
2. Note the number of rubber gloves (\_\_\_\_\_) you see.
3. Continue down the corridor in the same direction until you find a pair of graphs titled “Model Validation of the Transition Rate and Magnetization”. Note the approximate value of  $T_1$  in *us* (\_\_\_\_\_).
4. The room number of your next location is given by the number you noted in step two followed by the number you noted in step three. To find the building number, continue down the hallway.
5. The building number of your next location is given by the room number (\_\_\_\_\_) of a room which, if it had existed, would directly face the first fire pull station you encounter.

## Location 7

1. Note the color (\_\_\_\_\_) of the door frame in front of you.
2. Let  $n$  be the number of tiles (\_\_\_\_\_) of that color at your feet.
3. Go down the hall, stopping at the first door on your right.
4. Take the  $n$ th name on the card beside the door, and note the middle letter (\_\_\_\_) of that person’s full name.
5. Proceed down the hall to a foyer.
6. Let  $m$  (\_\_\_\_\_) be the size of the smallest connected rectangle of tiles of the color you noted above.
7. Enter the elevator and proceed to the  $m$ th floor.
8. Note the full number of the room directly in front of you.

9. To find your next location, take that room number. First, divide the building number by  $n$ , then insert the letter you noted in step four into the number.

## Location 8

1. To your right is a set of posters advertising events.
2. Note the day of month (\_\_\_\_\_) of the most recent event.
3. Continue down the hallway until you find another event on the same wall occurring on the same day of the month.
4. Your next location is the location of this event (lower entrance).

## Final Location

Take the provided map, with the locations of your Magnetonomic Adjacency Detector parts marked. Exactly one of your parts will fit on the map with its vertices on some of the locations you marked. Your final location is found at the center of mass of this part, which will also fall on a vertex of the grid.