```python
1    import math
2    import matplotlib.pyplot as plt
3    import boom
4    import geometry
5    import numpy as np
6
7    def distance(point1, point2):
8        z_1, y_1 = point1[0], point1[1]
9        z_2, y_2 = point2[0], point2[1]
10       return math.sqrt((y_1 - y_2)**2 + (z_1 - z_2)**2)
11
12   def distance_point_line(point, line):
13       """
14       :param point: tuple (z, y) containing point coordinates
15       :param line: tuple (A, B, C) containing line such that Az + By + C = 0
16       :return: euclidean distance between line and point
17       """
18       z, y = point[0], point[1]
19       A, B, C = line[0], line[1], line[2]
20       return abs(A * z + B * y + C) / math.sqrt(A ** 2 + B ** 2)
21
22   def plot_boom_coordinates(coordinates):
23       """
24       Plot coordinates to verify visually that they are correct.
25       :param coordinates: list of lists [z, y] containing the coordinates of each boom.
26       """
27       zs = []
28       ys = []
29       n = range(len(coordinates))
30       for boom_coord in coordinates:
31           zs.append(boom_coord[0])
32           ys.append(boom_coord[1])
33       fig, ax = plt.subplots()
34       ax.scatter(zs, ys)
35       plt.axhline(0, color='black')
36       for i, txt in enumerate(n):
37           ax.annotate(txt, (zs[i], ys[i]))
38       plt.show()
39
40
41   def get_list(booms, parameter_position):
42       list = []
43       for element in booms:
44           num = len(element.adjacents)
45           adjacent_booms = []
46           for num in range(num):
47               adjacent_booms.append(element.adjacents[num][parameter_position])
48           list.append(adjacent_booms)
49       return list
50
51   def get_thickness_list(booms):
52       get_list(booms, 1)
53
54   def get_adjacents_list(booms):
55       get_list(booms, 0)
56
57   def get_lengths_list(booms):
58       get_list(booms, 2)
59
60   def get_common_wall(cells):
61       for wall1 in cells[0]:
62           if wall1 in cells[1]:
63               return wall1
```

```python
def get_array_x_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 0]
    return data
def get_array_Mx_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 1]
    return data
def get_array_My_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 2]
    return data
def get_array_Mz_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 3]
    return data
def get_array_Sy_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 4]
    return data
def get_array_Sz_i(file_name):
    data = np.genfromtxt(file_name, skip_header=1)[:, 5]
    return data
```