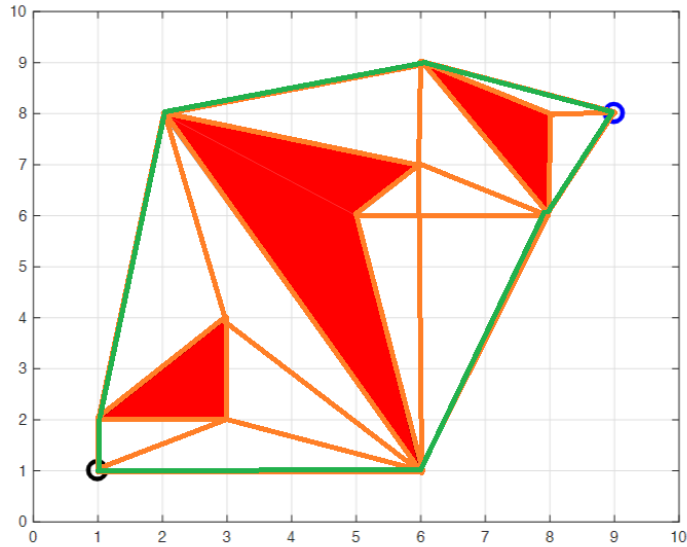


Problem 1

Orange is the visibility graph...

Green is the reduced visibility graph...



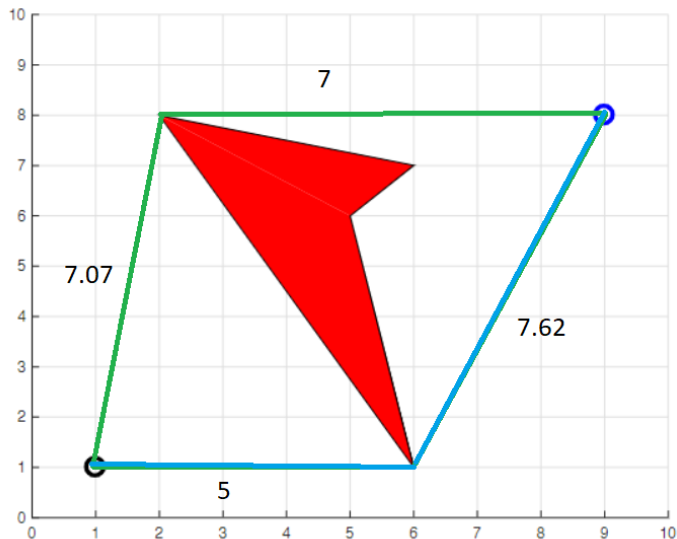
Problem 2

./Node.py

https://github.com/nosv1/seagraves_unmanned_systems/blob/main/HW1/Node.py

Problem 3

Blue is the shorter path...



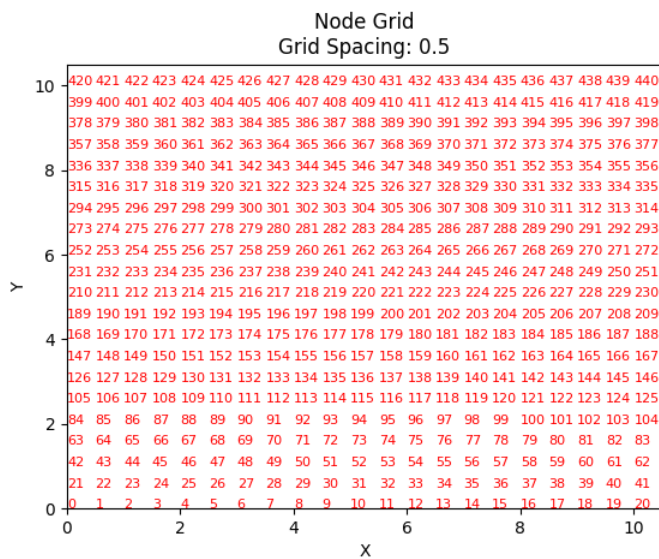
Problem 4

./Grid.py

https://github.com/nosv1/seagraves_unmanned_systems/blob/main/HW1/Grid.py

./main.py

```
1 from Grid import Grid
2
3 def main():
4     grid: Grid = Grid(
5         max_x=10,
6         max_y=10,
7         grid_spacing=0.5
8     )
9     grid.plot()
10
11 if __name__ == "__main__":
12     main()
```



Problem 5

./main.py

```
1 from Node import Node
2
3 def main():
4     nodes = [
5         Node(2, 1),
6         Node(3, 2),
7     ]
8     distance = nodes[0].distance(nodes[1])
9     print(f"Distance: {nodes[0].distance(nodes[1])}")
10
11 if __name__ == "__main__":
12     main()
```

Outputs:

Distance: 1.4142135623730951