Example Homework Solution:

```
Sample Configuration

return uniform (0, 1)
```

How do we bias the tree to explore closer to the goal?

```
1. Collision Check
2. Sample Planner
3. Next Neighbor
4. Sample Configuration
```

```
m \rightarrow \text{extend} \left( \frac{m}{2}, \frac{m}{2} \right)
```

```
while not completed (199)
\rightarrow \frac{5}{2}
T
```
3. Other Ideas:
   2. Path reduction amount
      1. Time limit
         Path Shortening?
         How can we know when to stop the path?
         Remove \((1 + x, 1 + x)\), \(F(E, [p, r])\)
         \(\text{random}(0, \text{length(path) - 1})\)
         \(\text{random}(0, \text{length(path) - 1})\)
         While time remaining:

Option 2:

Option 1:

Path, remove \((idx, idx)\)
if \(E < n, 1, n, 1, 2\)
\(n2 \rightarrow \text{path}[\text{idx} + 1]\)
\(n1 \rightarrow \text{path}[\text{idx} - 1]\)
For \(\text{idx} = 0, \text{length(path) - 2}\)

Otherwise uninteresting. How can we eliminate these?

RT paths can contain a lot of extra
Path Shortening
Example homework solution:

Forward  \Rightarrow \text{Forward}

- \text{Connected} \Rightarrow \text{Check Connection (Tg,Tf)}
- \text{m} \Rightarrow \text{Extend (m', m'2)}
- \text{m}2 \Rightarrow \text{Nearest Neighbor (T2)}
- \text{m}1 \Rightarrow \text{Extend (g', m')}
- \text{m}1 \Rightarrow \text{Nearest Neighbor (T1)}
- \text{Sample Configuration (T)}

Option 2: While not connected:

- \text{Connected} \Rightarrow \text{Check Connection (Tg,Tf)}
- \text{m} \Rightarrow \text{Extend (g', m')}
- \text{m} \Rightarrow \text{Nearest Neighbor (T)}

For \text{ T in } \{T3, Tg3\}, \text{optional: While not connected:}
- \text{Sample Configuration (T)}

Option 1: While not connected:

- 5 \Rightarrow 1
- 3 \Rightarrow 803
- 802 \Rightarrow 7