Problem 3

---step 1---

cost is

(1 : inf) (2 : inf) (3 : inf) (4 : inf) (5 : 0.0) (6 : inf) (7 : inf) (8 : inf) (9 : inf)

Heap is

5.cost= 0.0

1.cost= inf

3.cost= inf

4.cost= inf

2.cost= inf

6.cost= inf

7.cost= inf

8.cost= inf

9.cost= inf

1.visited = False

2.visited = False

3.visited = False

4.visited = False

5.visited = True

6.visited = False

7.visited = False

8.visited = False

9.visited = False

---step 2---

cost is

(1 : inf) (2 : 8.0) (3 : inf) (4 : 5.0) (5 : 0.0) (6 : 9.0) (7 : inf) (8 : 5.0) (9 : inf)

Heap is

4.cost= 5.0

8.cost= 5.0

6.cost= 9.0

2.cost= 8.0

9.cost= inf

3.cost= inf

7.cost= inf

1.cost= inf

1.visited = False

2.visited = False

3.visited = False

4.visited = True

5.visited = True

6.visited = False

7.visited = False

8.visited = False

9.visited = False

---step 3---

cost is

(1 : 7.0) (2 : 4.0) (3 : 4.0) (4 : 5.0) (5 : 0.0) (6 : 9.0) (7 : 9.0) (8 : 5.0) (9 : 2.0)

Heap is

9.cost= 2.0

2.cost= 4.0

3.cost= 4.0

1.cost= 7.0

8.cost= 5.0

6.cost= 9.0

7.cost= 9.0

1.visited = False

2.visited = False

3.visited = False

4.visited = True

5.visited = True

6.visited = False

7.visited = False

8.visited = False

9.visited = True