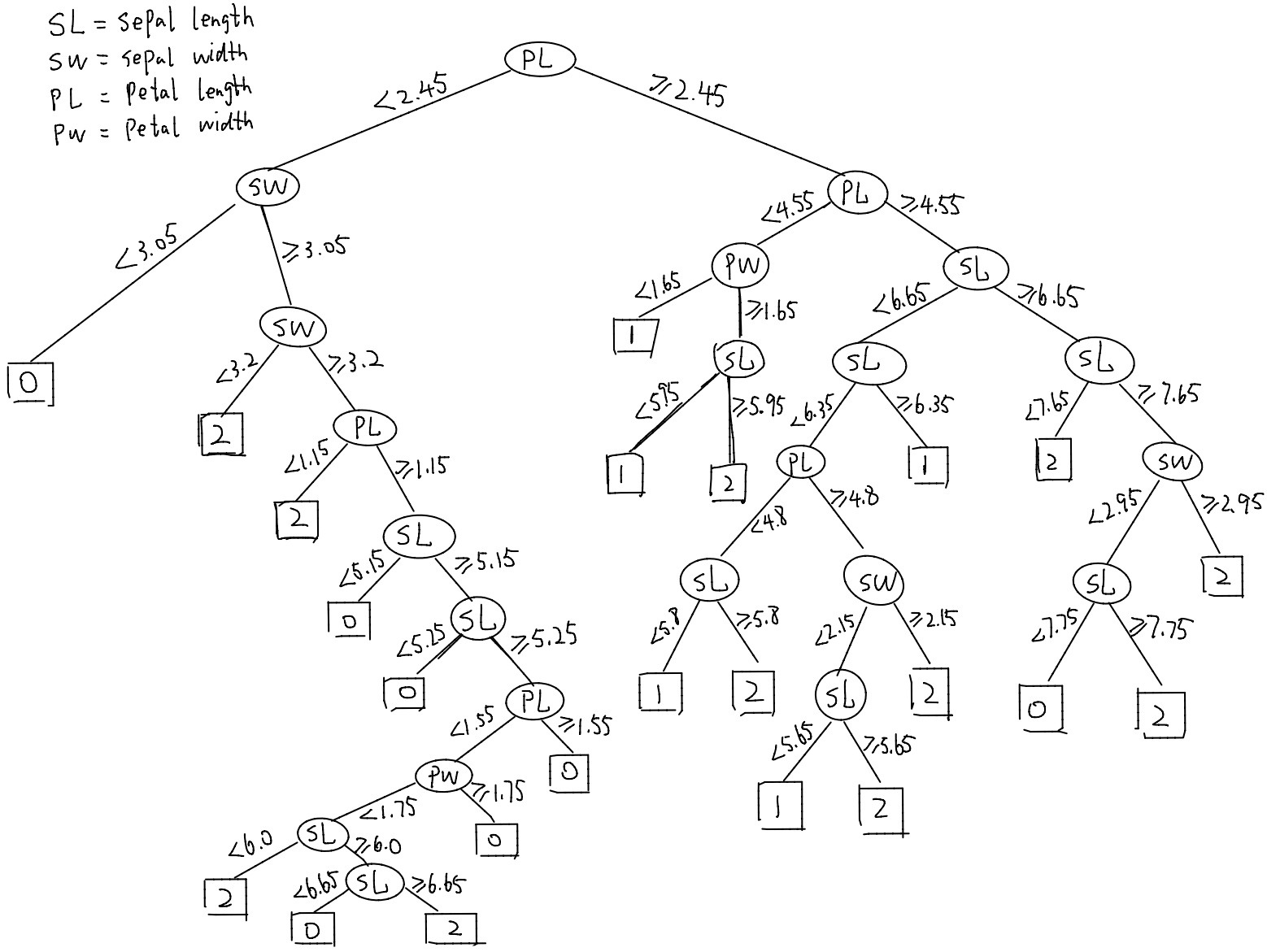
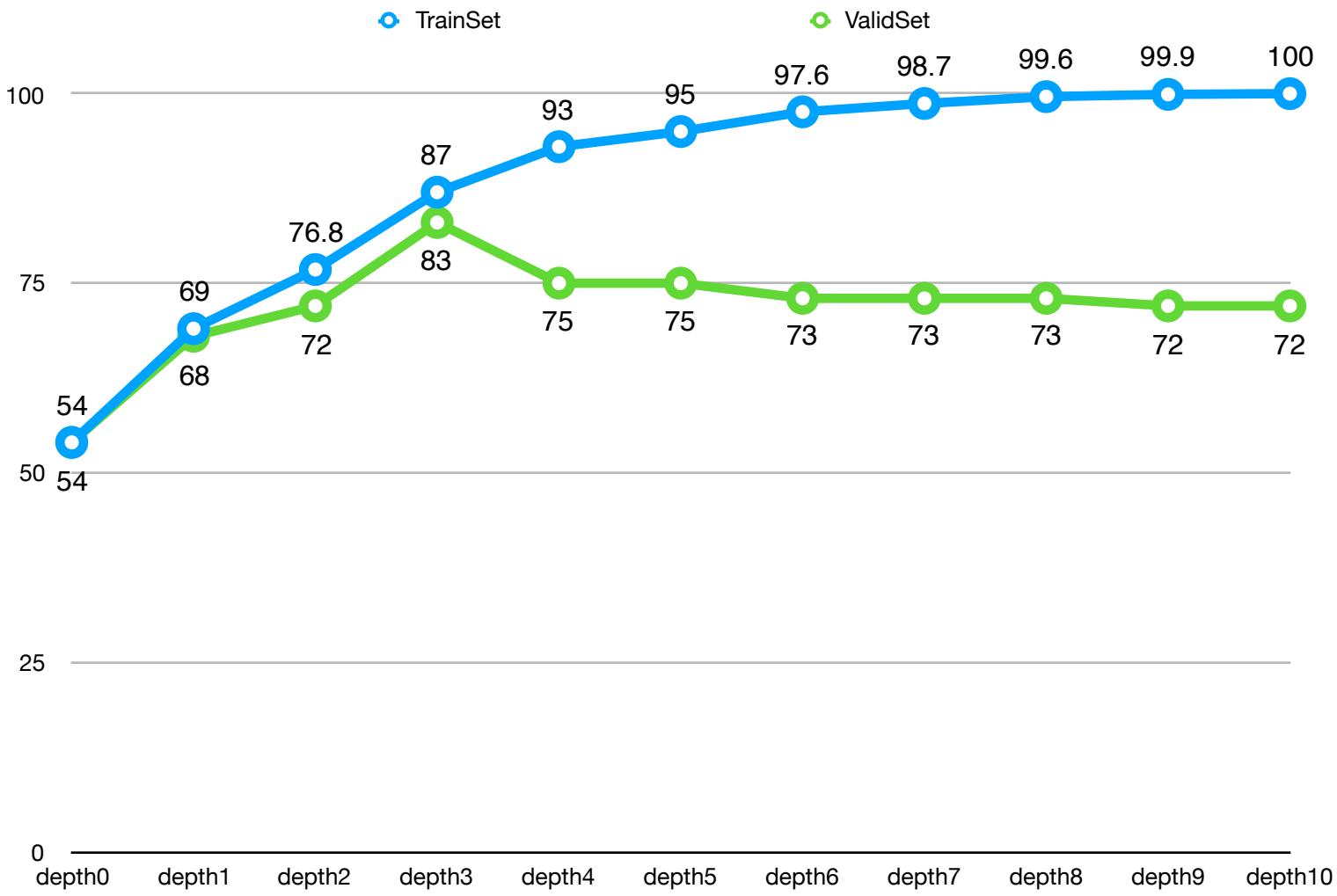
Q2.1


SL = Sepal length
SW = Sepal width
PL = Petal length
PW = Petal width
PL
< 2.45
≥ 2.45
SW
< 3.05
≥ 3.05
0
SW
< 3.2
≥ 3.2
2
PL
< 1.15
≥ 1.15
2
SL
< 5.15
≥ 5.15
0
SL
< 5.25
≥ 5.25
0
PL
< 1.55
≥ 1.55
PW
< 1.75
≥ 1.75
0
SL
< 6.0
≥ 6.0
2
SL
< 6.65
≥ 6.65
0
2
PL
< 4.55
≥ 4.55
PW
< 1.65
≥ 1.65
1
SL
< 5.95
≥ 5.95
1
2
SL
< 6.65
≥ 6.65
SL
< 6.35
≥ 6.35
PL
< 4.8
≥ 4.8
1
SL
< 5.8
≥ 5.8
1
2
SW
< 2.15
≥ 2.15
2
SL
< 5.65
≥ 5.65
1
2
SL
< 7.65
≥ 7.65
2
SW
< 2.95
≥ 2.95
SL
< 7.75
≥ 7.75
0
2
2

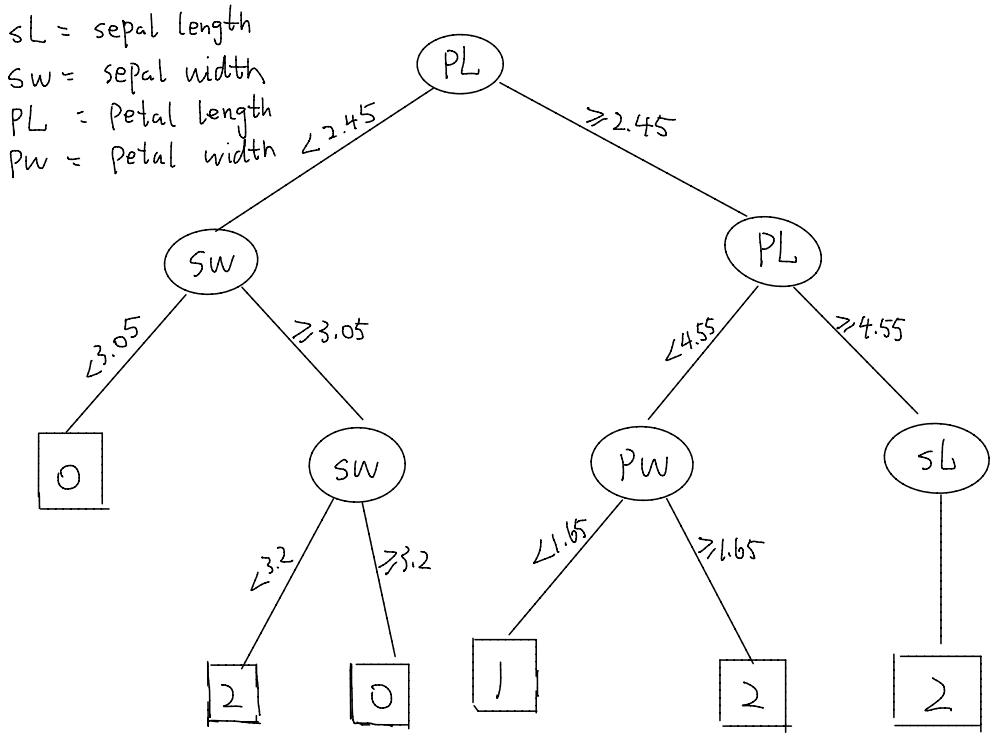
Q2.2


TrainSet
ValidSet
100
75
50
25
0
54
69
76.8
87
93
95
97.6
98.7
99.6
99.9
100
54
68
72
83
75
75
73
73
73
72
72
depth0
depth1
depth2
depth3
depth4
depth5
depth6
depth7
depth8
depth9
depth10

- What is the maximum depth of your decision tree that maximizes the average prediction accuracy of the generated tree on the validation set?

Ans: The depth 3 maximizes the average prediction accuracy of the generated tree on the validation set.

- Generate a decision tree with the best maximum depth using the entire data set A.



- What is the prediction accuracy of the decision tree with the best maximum depth on data set A?

Ans: 87%