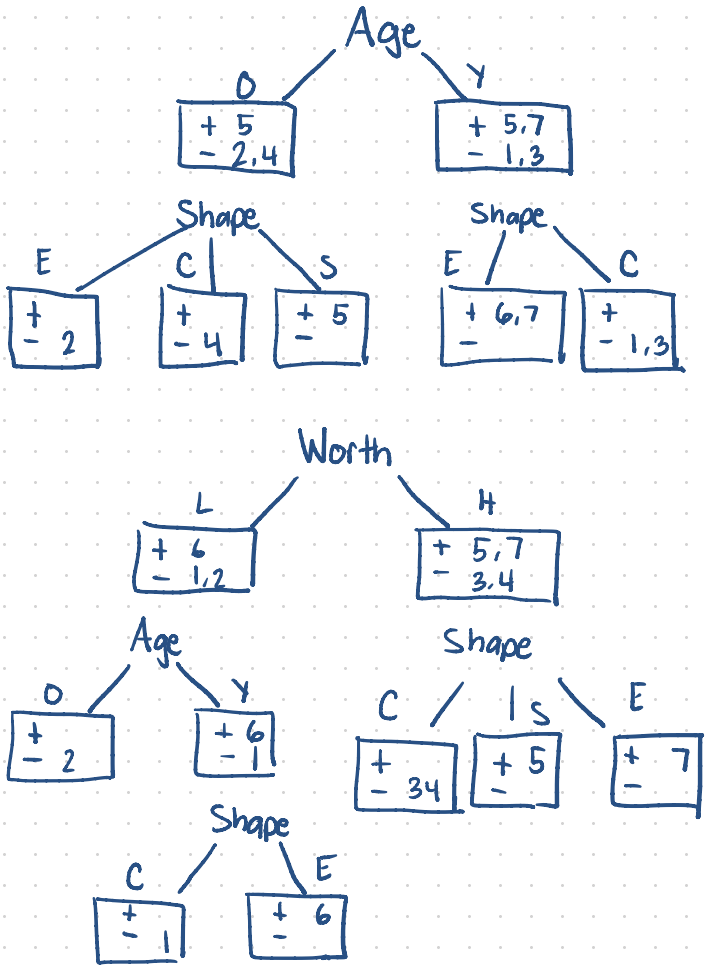
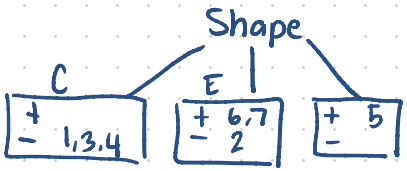
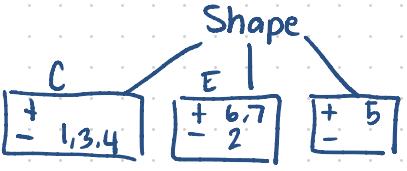
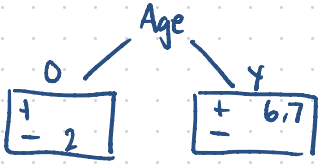
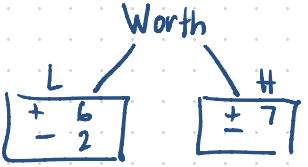
1a)


Age
O
+ 5
- 2,4
Y
+ 5,7
- 1,3
Shape
E
+
- 2
C
+
- 4
S
+ 5
-
Shape
E
+ 6,7
-
C
+
- 1,3
Worth
L
+ 6
- 1,2
H
+ 5,7
- 3,4
Age
O
+
- 2
Y
+ 6
- 1
Shape
C
+
- 34
S
+ 5
-
E
+ 7
-
Shape
C
+
- 1
E
+ 6
-

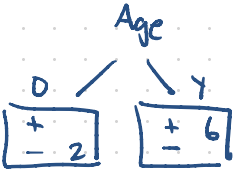








- Best Learned Tree



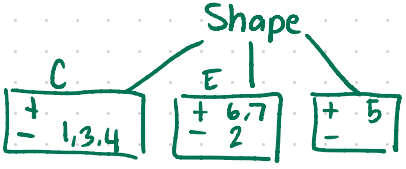
1b)

Our VALIDATION set:

				Best Learned	+5,6,7 -1,2,3,4 Majority	
SHAPE = C	AGE = O	WORTH = L	CATEGORY = -	-	-	-
SHAPE = S	AGE = O	WORTH = H	CATEGORY = +	+	-	+
SHAPE = E	AGE = O	WORTH = H	CATEGORY = +	-	-	+
SHAPE = E	AGE = Y	WORTH = H	CATEGORY = -	+	-	+
SHAPE = C	AGE = Y	WORTH = L	CATEGORY = -	-	-	-
				60%	60%	80%

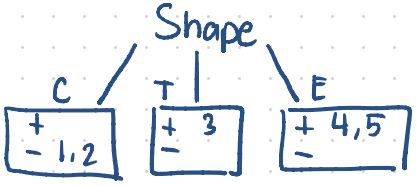
Shape

(-)



(+)

1c)



Using the decision tree from part b on the test set yields the above tree. There is no S in the test set and no T in the validation set so we are not able to test the accuracy for those shapes. If we look solely at C and E, 3 out of 4 are correct, so the tree gives us answers that are 75% accurate.