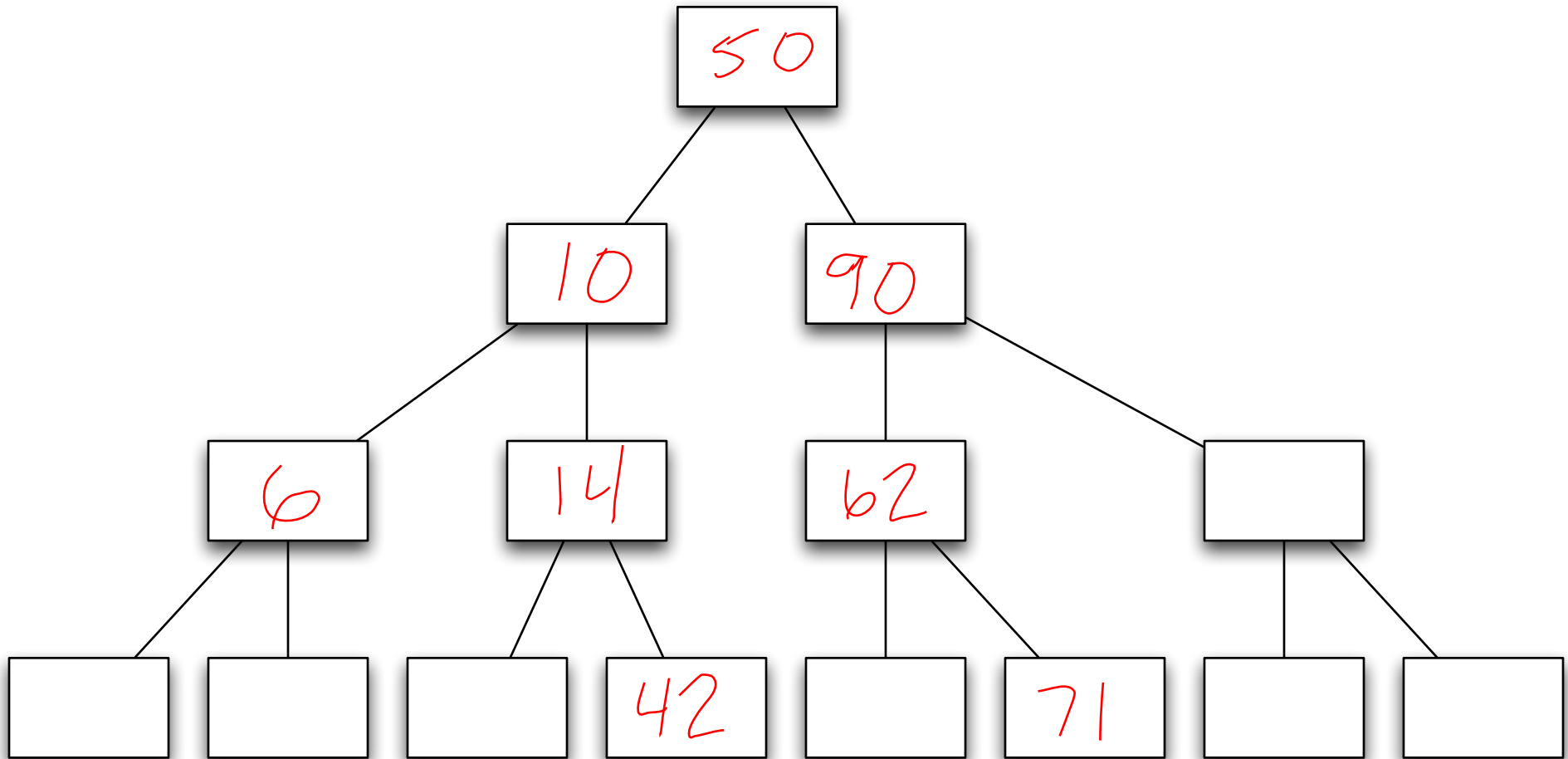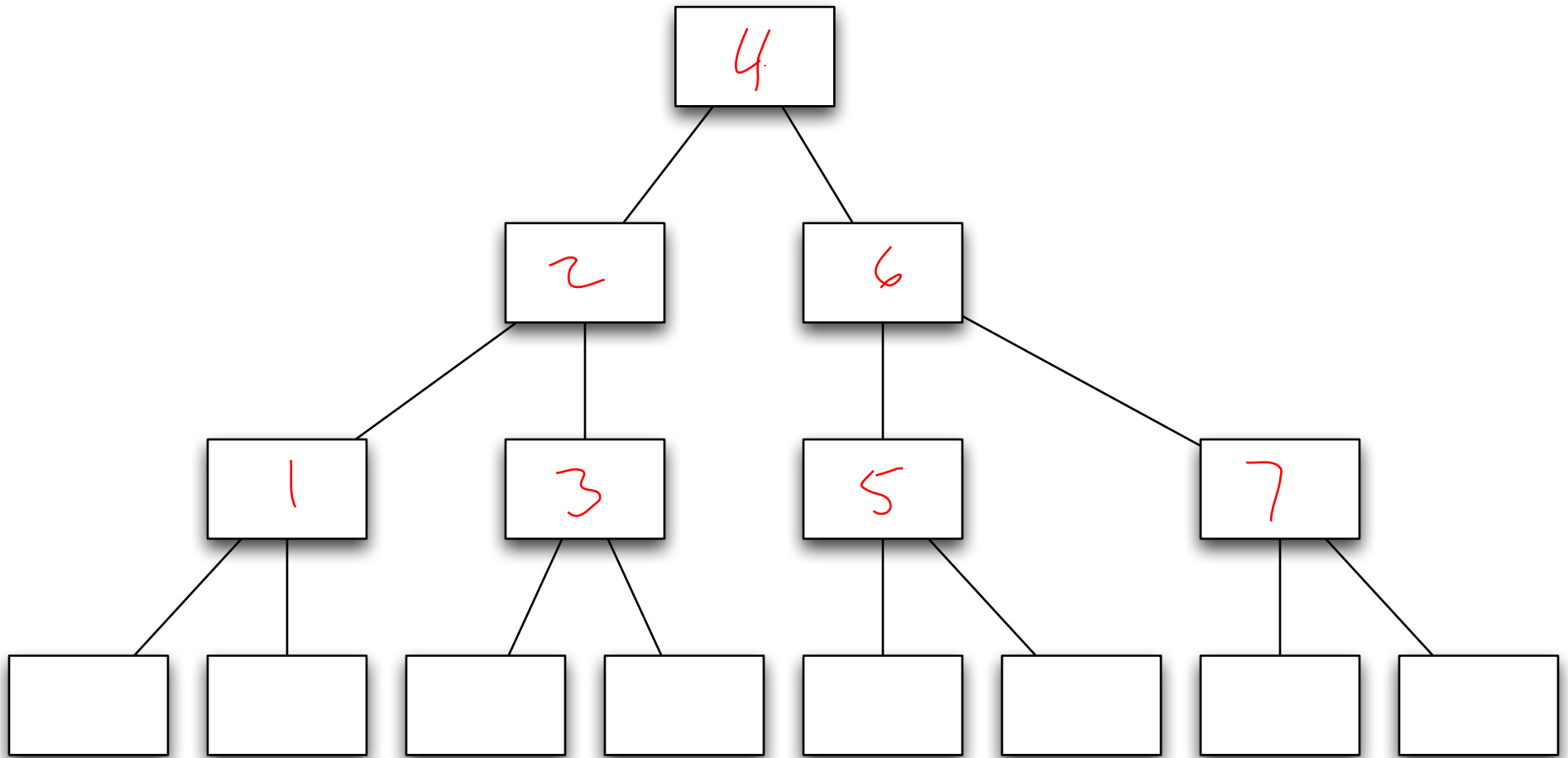Name: Stephen Townsend   Question#: 1

Show the binary search tree built by adding numbers in this specific order, assuming the graph is empty to start with: 50, 10, 90, 14, 62, 71, 42, 6.

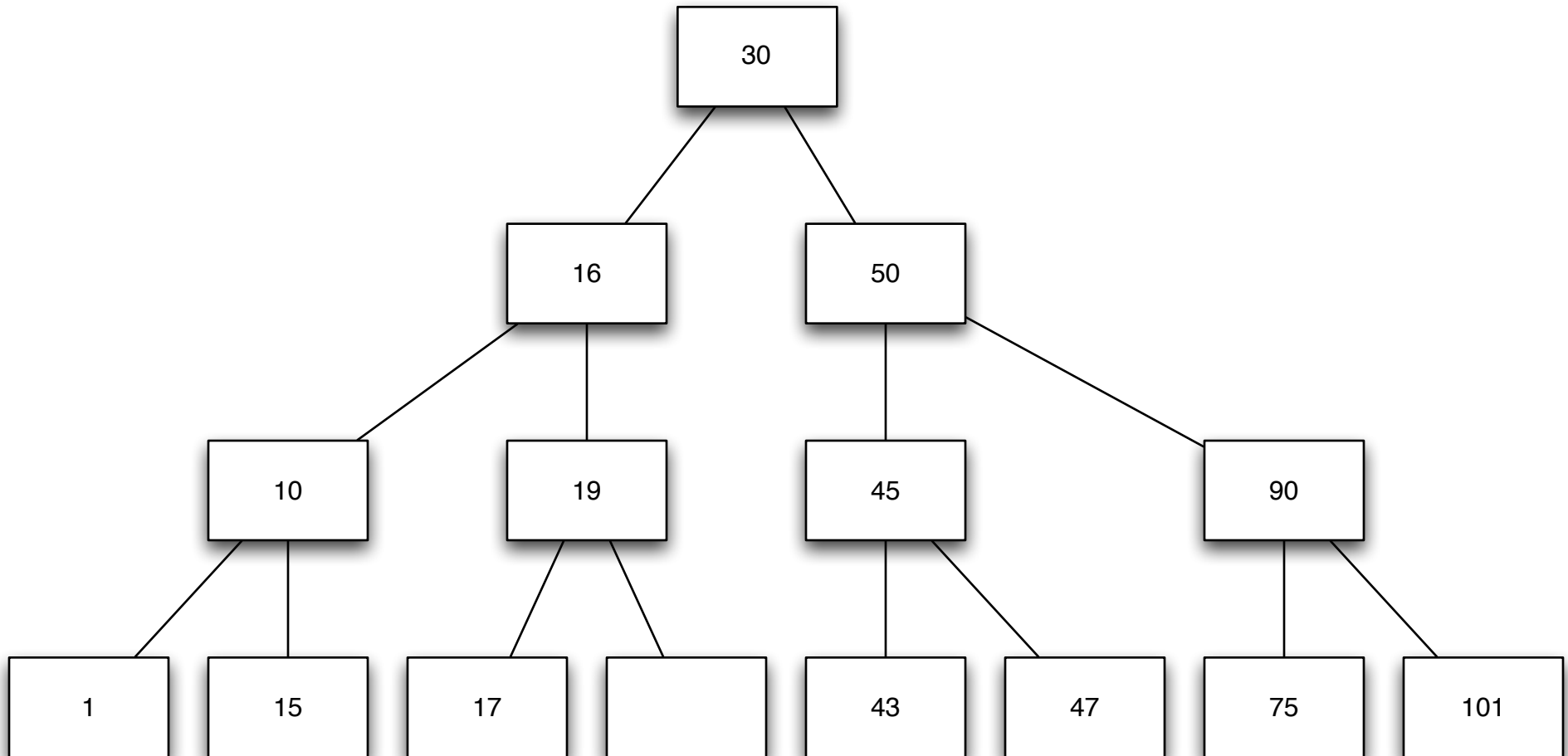Name: *Stephen Townsend* Question#: *2*

Insert the even digits first in the order of: 4, 2, 6, then any order of (1, 3, 5, 7)

Stephen Townsend
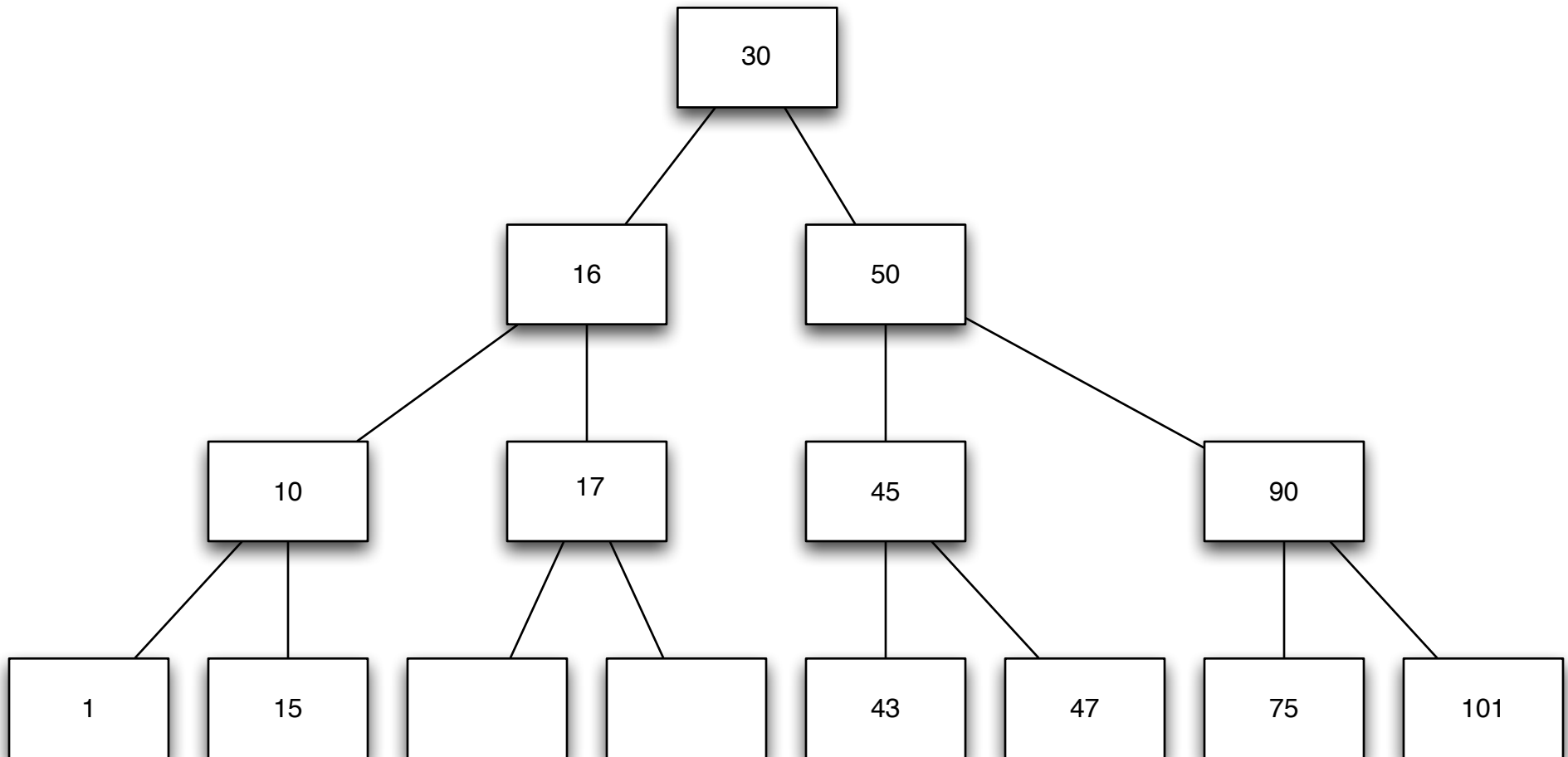
Question 3 Part A

Given the following tree, question3.pdf, show the tree after removing the value 42.

Question 3 Part B

Using the tree produced by Part A, show the tree after removing the value 19.

```
                              30
                 16                      50
          10        17           45            90
        1    15                43    47      75    101
```

Question 4

Show the decision tree that the computer should build after adding a Zergling and a question to differentiate it, "Does it eat space marines?", to the tree.

```
                        does it live
                          in the
                          water?
                   Yes              No
                 /                     \
         is it a                    does it
         mammal?                    climb
                                    trees?
      Yes        No            Yes            No
     /            |             |               \
  whale       sea turtle       cat          does it eat
                                            space
                                            marines?
                                         Yes        No
                                          |           \
                                       zergling      dog
```