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CS 770  
Asn05

1.

$$T = (N(A - Q)) / (N(A - B))$$
$$P = A + t(B - A)$$

Polygon 1:

$$V1 = (2,0,0)$$
$$V2 = (0,2,0)$$
$$V3 = (0.5,1.5,2)$$
$$V4 = (1.5,0.5,2)$$
$$P13 = (1.5,0.5,2)$$

Polygon 2:

$$V1 = (1,1,4)$$
$$V2 = (0.5,1.5,2)$$
$$V3 = (1.5,0.5,2)$$
$$P23 = (0.5,1.5,2)$$

2 polygons after clipping:

Back: V1P12P23V2

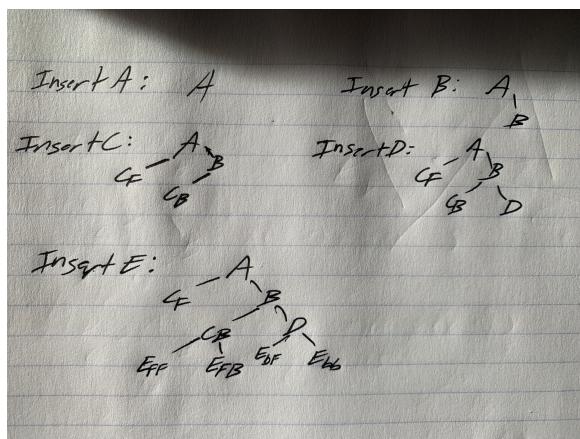
Front: P12V3P23

2.

- a. C,A,E,B,D
- b. D,B,E,C,A

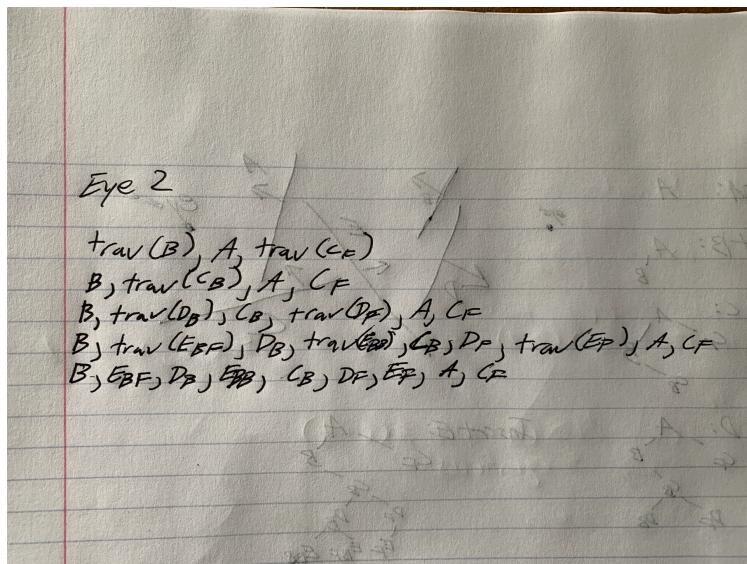
3.

A.

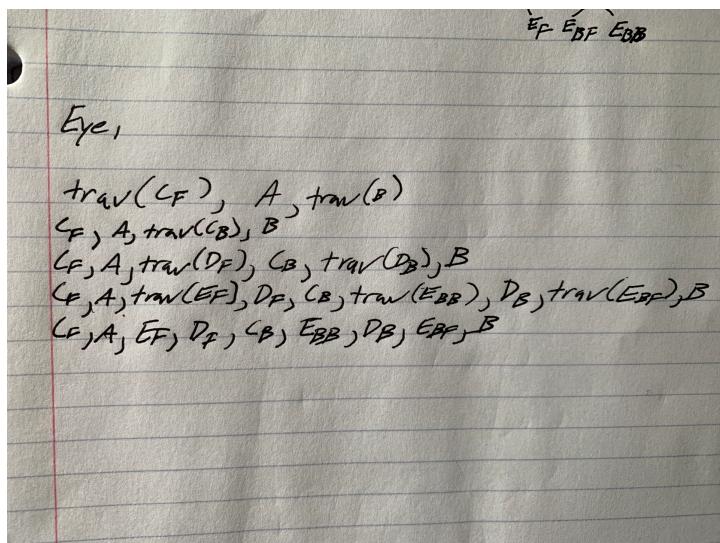


B. This is not the smallest possible tree. Starting with different insertions such as E and ending with A would lead to a smaller tree with only 6 nodes.

C.



D.



4.

```
Traverse(root, eye, volume)
Σ
if (root != Null) ε
    if (all corners are in front of root)
        Traverse (root.left, eye, volume)
    else if (All corners of volume are in back)
        Traverse (root.right, eye, volume)
    else if (eye in front of root) ε
        Traverse (root.right, eye, volume)
        Draw (root)
        Traverse (root.else, eye, volume)
    }
else ε
    Traverse (root.else, eye, volume)
    Draw (root)
    Traverse (root.right, eye, volume)
```

3

5

5