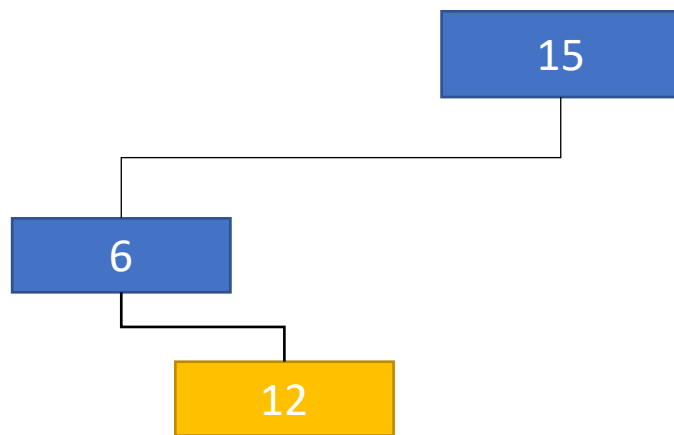
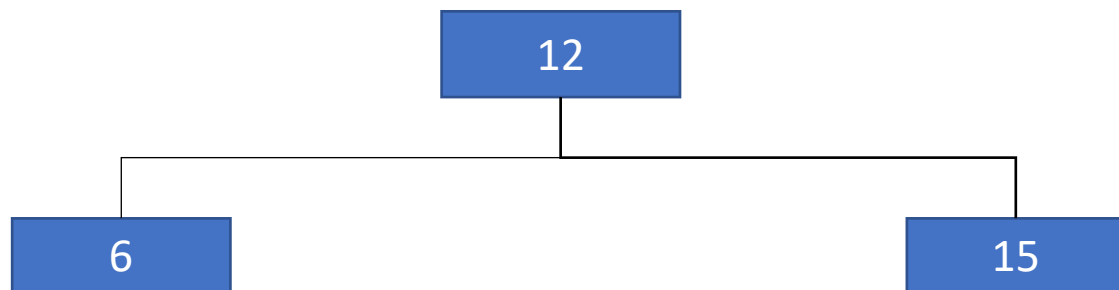


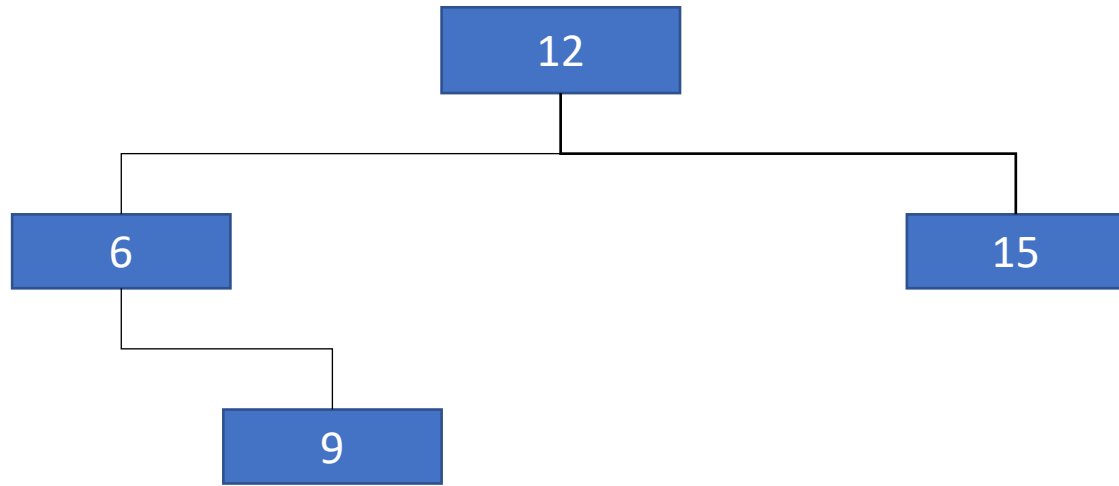
a) Insira os seguintes elementos em uma árvore AVL: 15, 6, 12, 9, 14, 13, 25, 18, 20, 23, 5, 3, 1, 38, 45, 50, 48, 46, 60. Lembrem-se que ao inserir precisam verificar se a árvore continua balanceada após cada inserção;

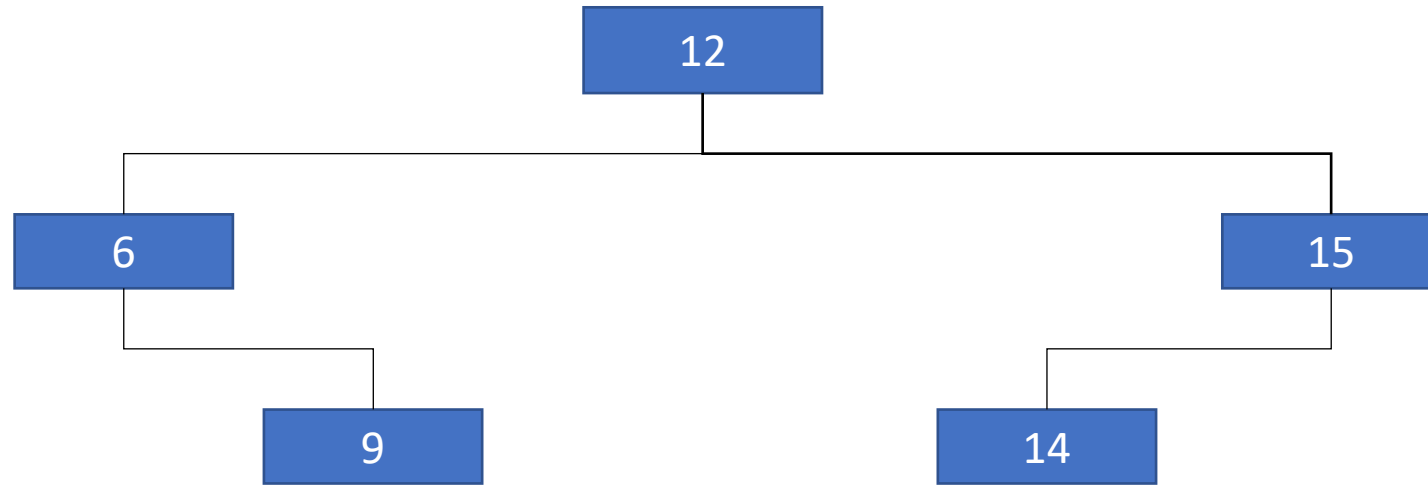


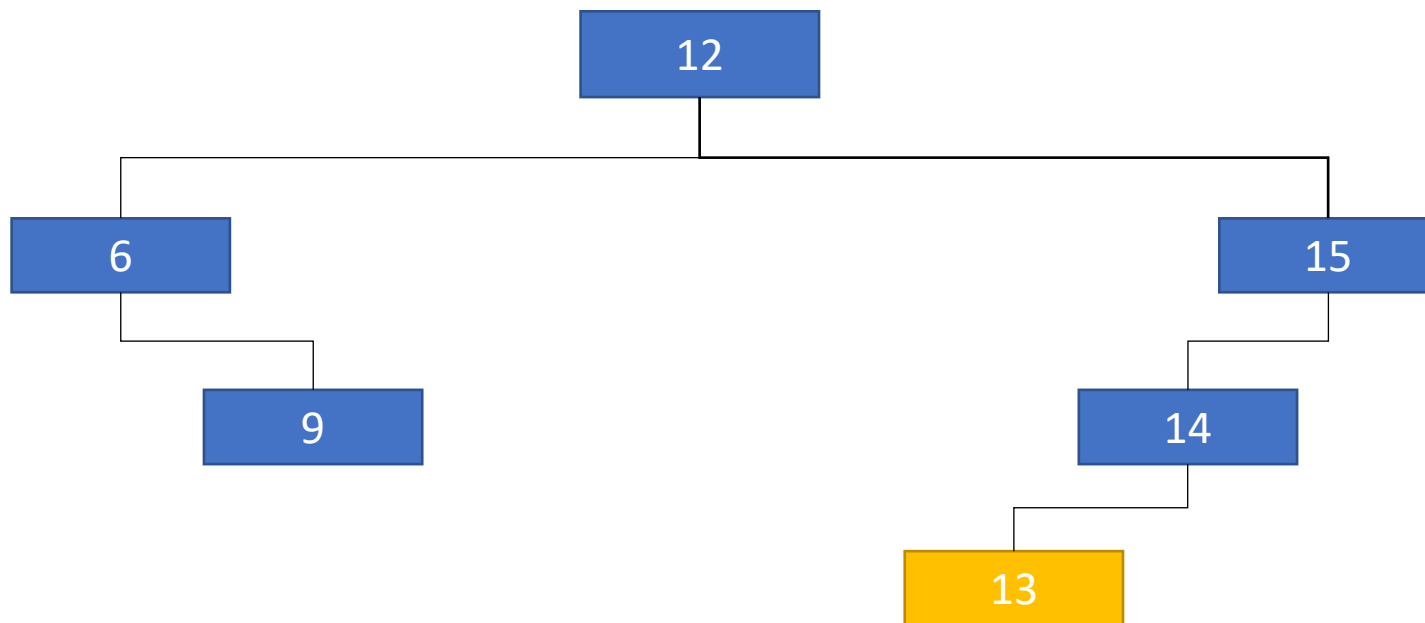




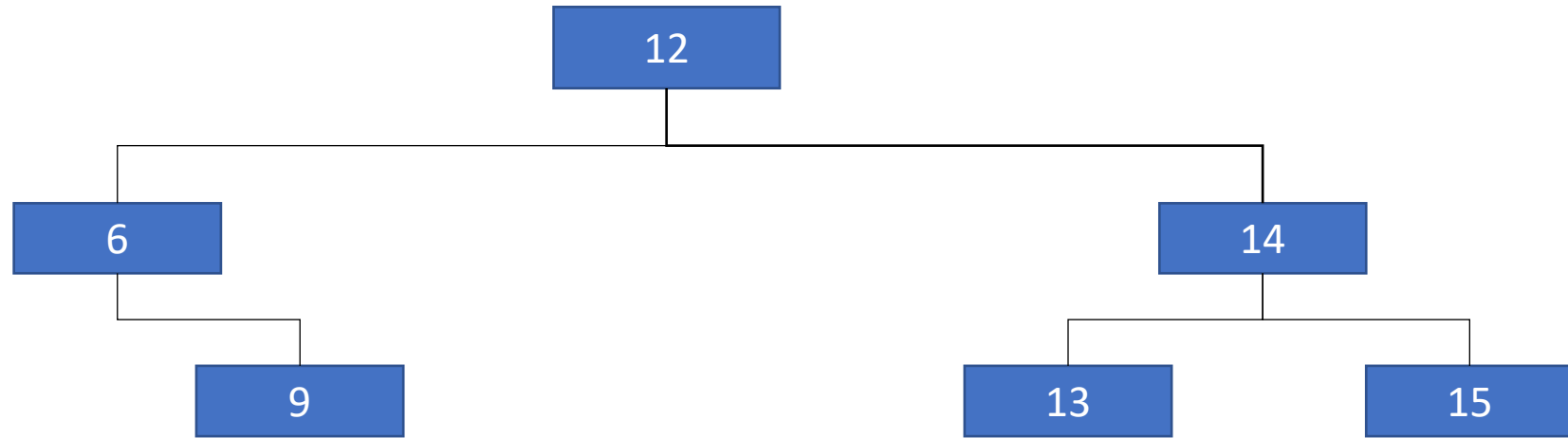


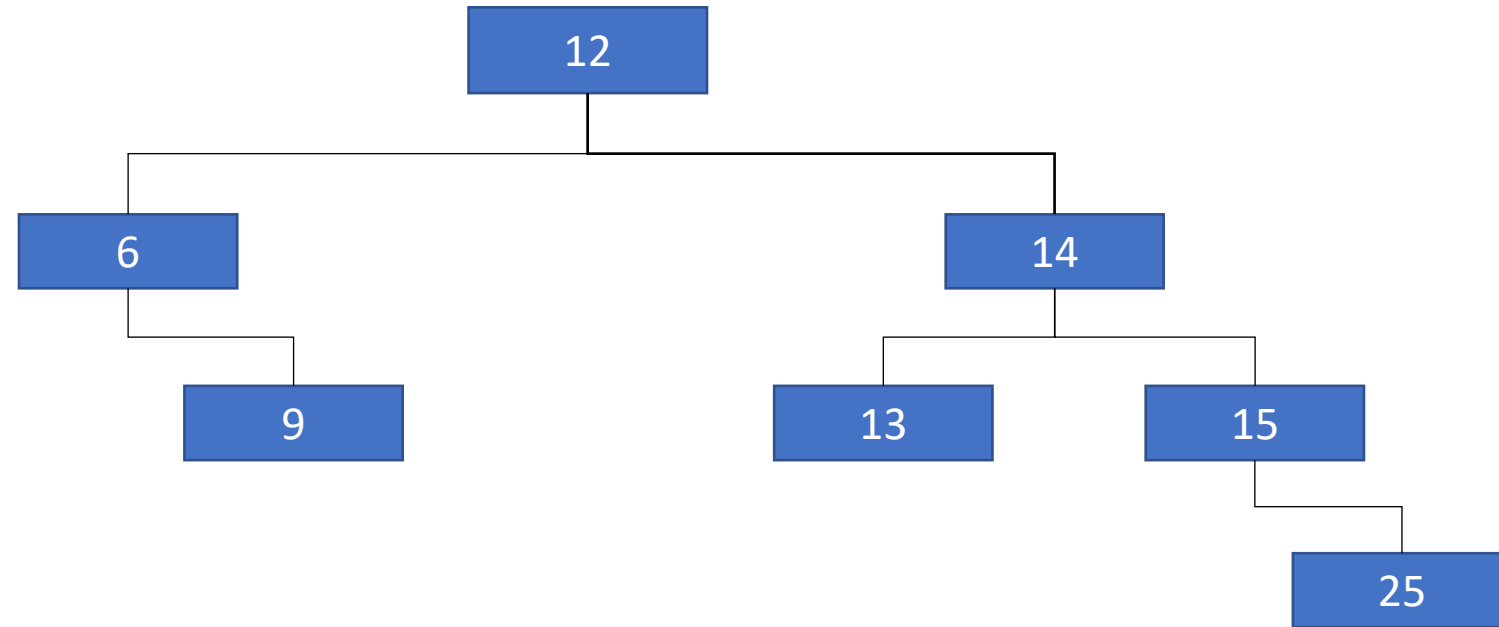


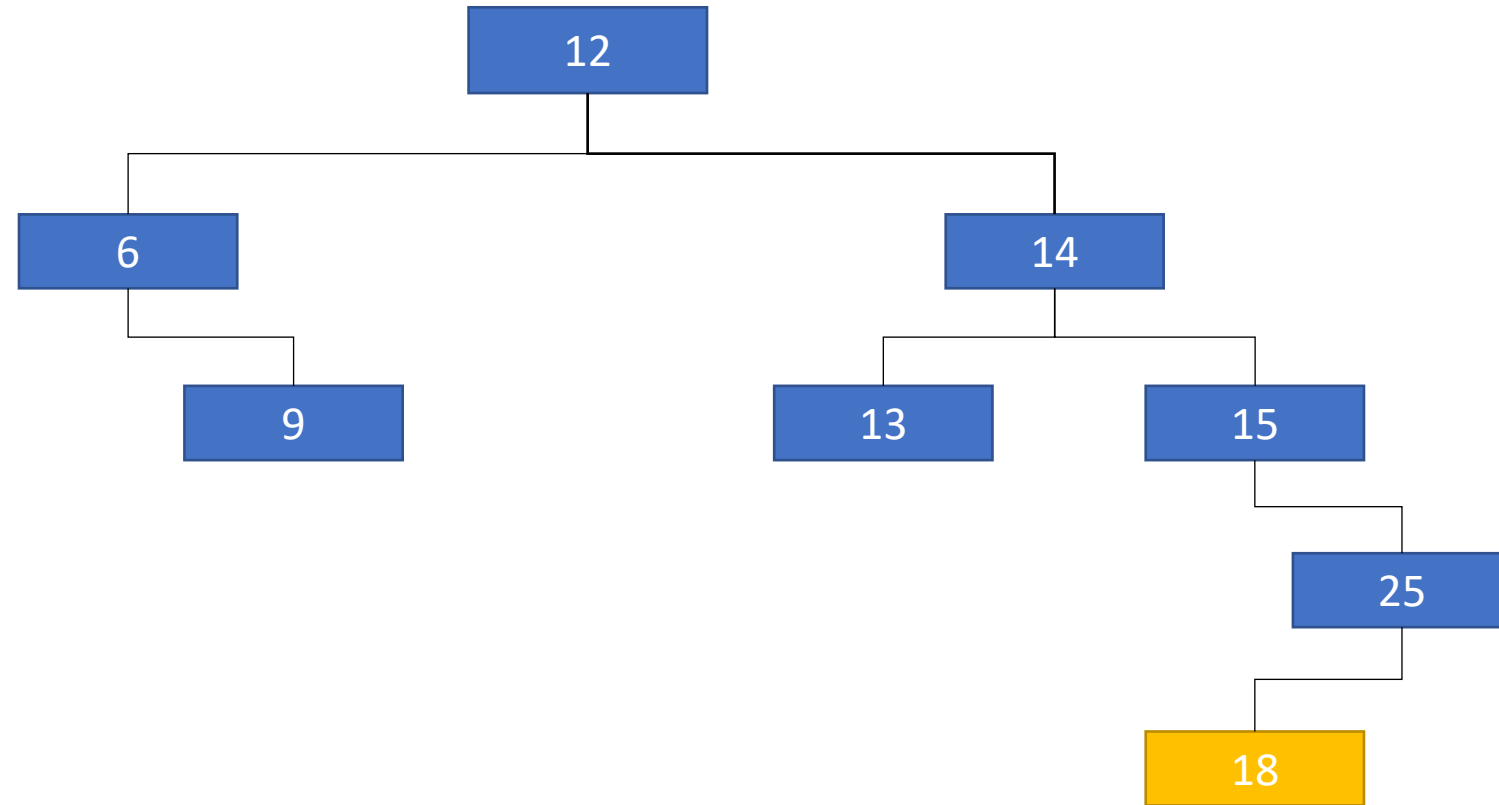


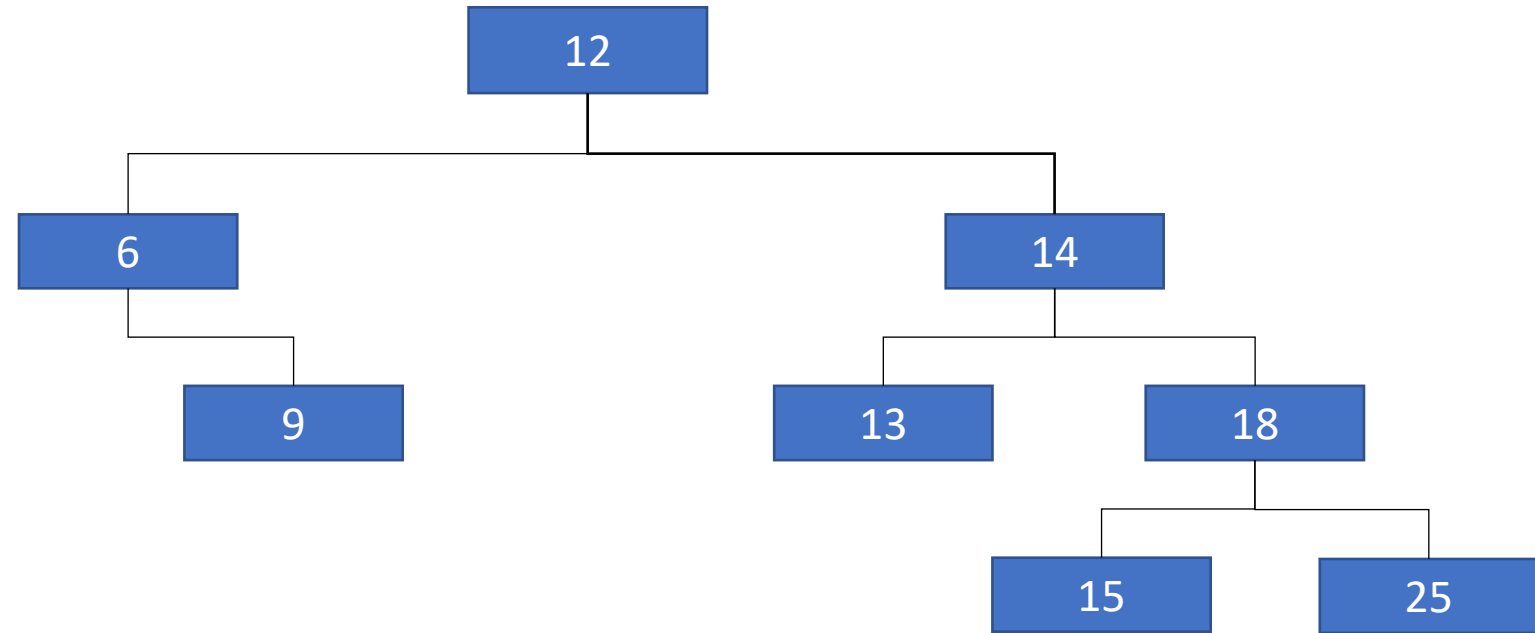


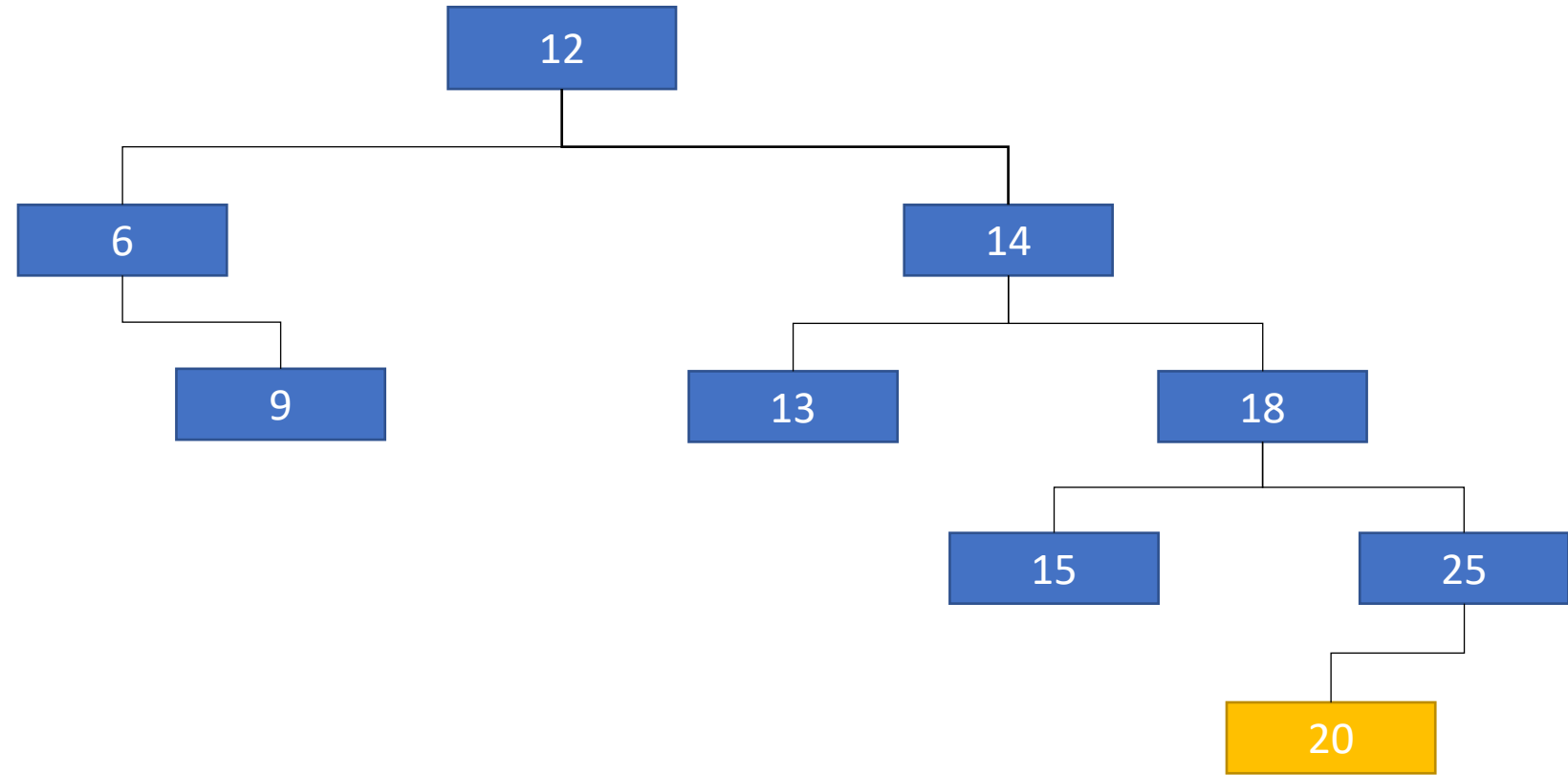


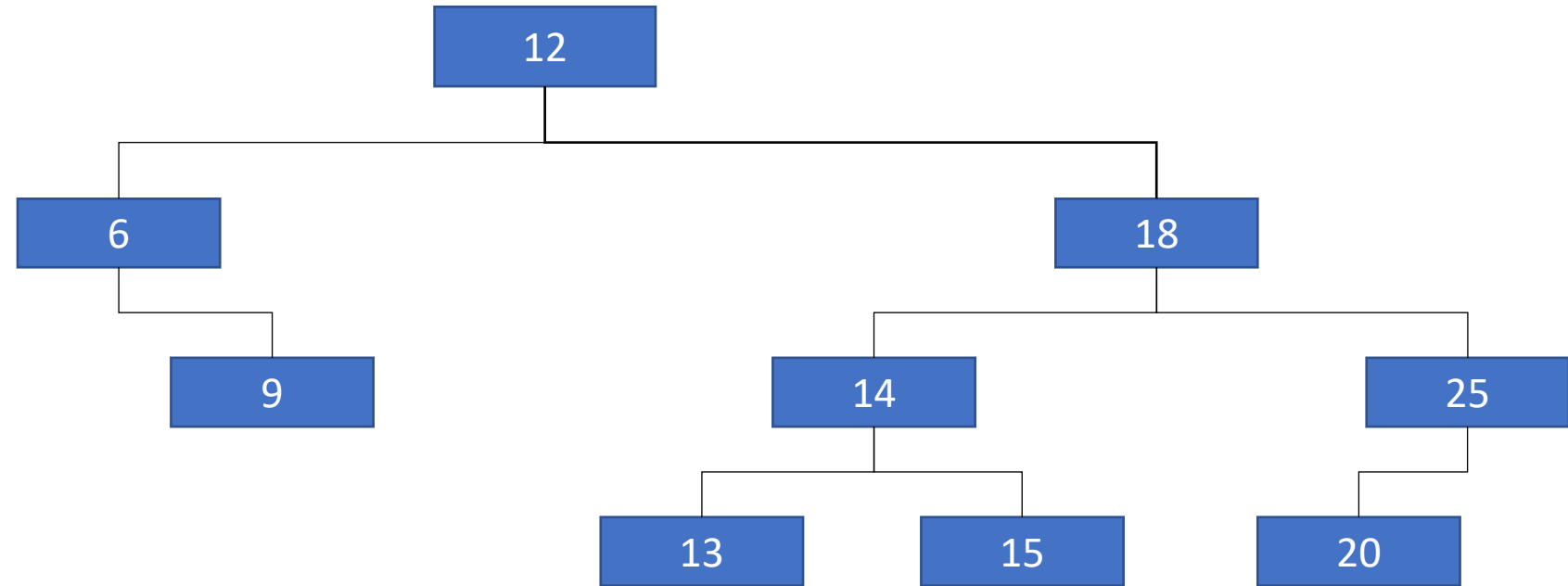


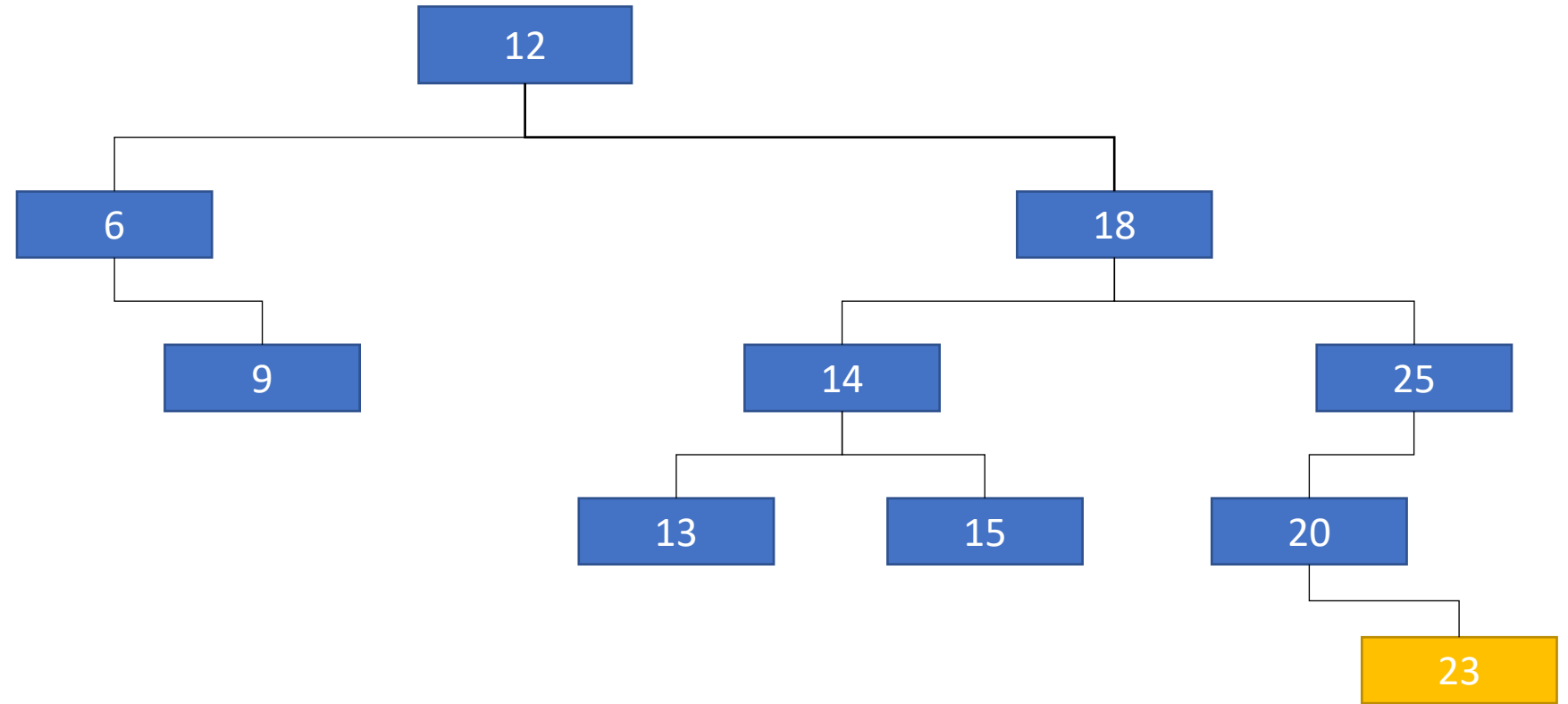


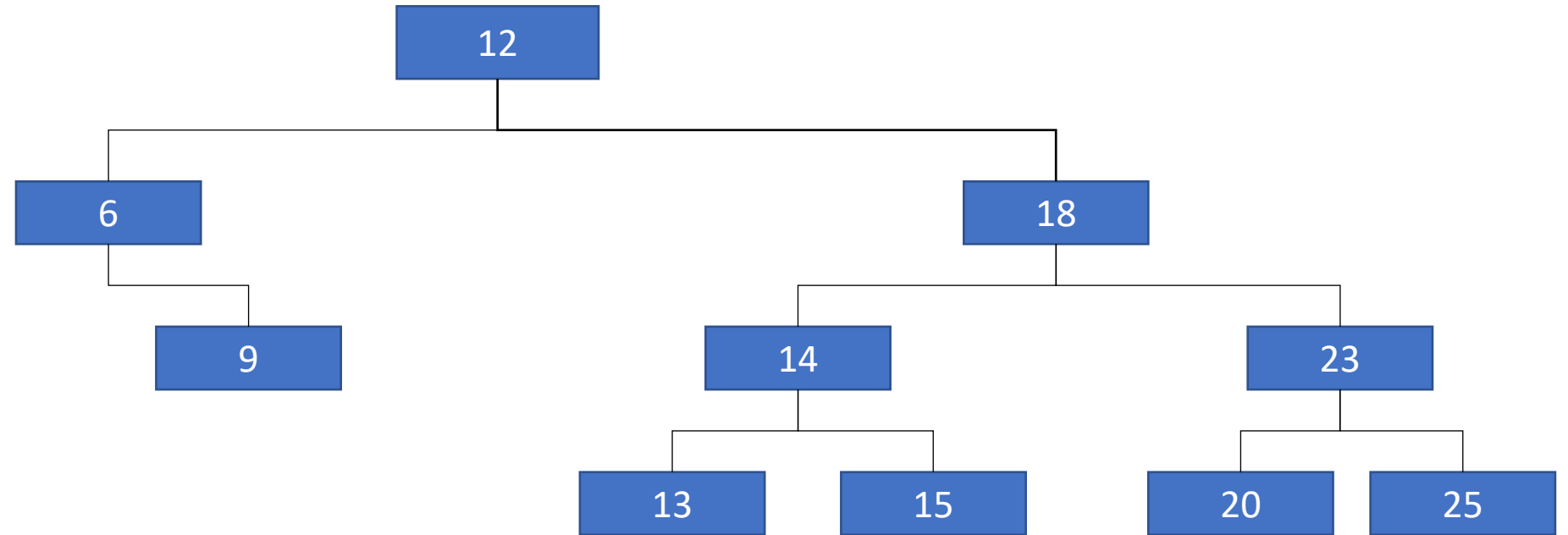




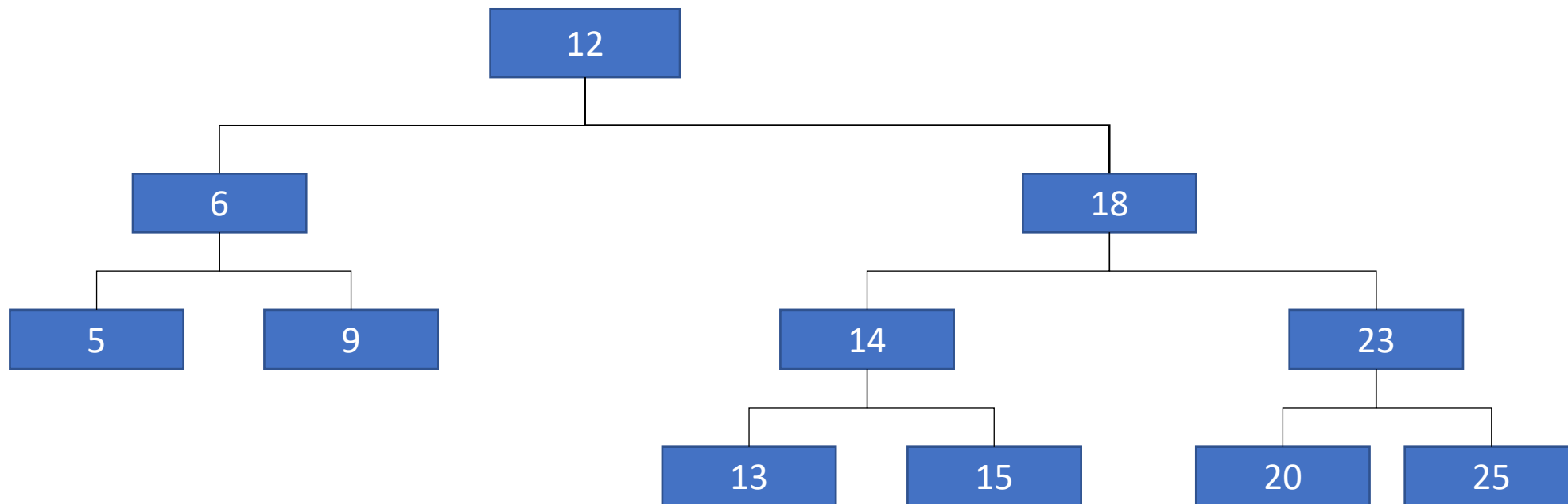


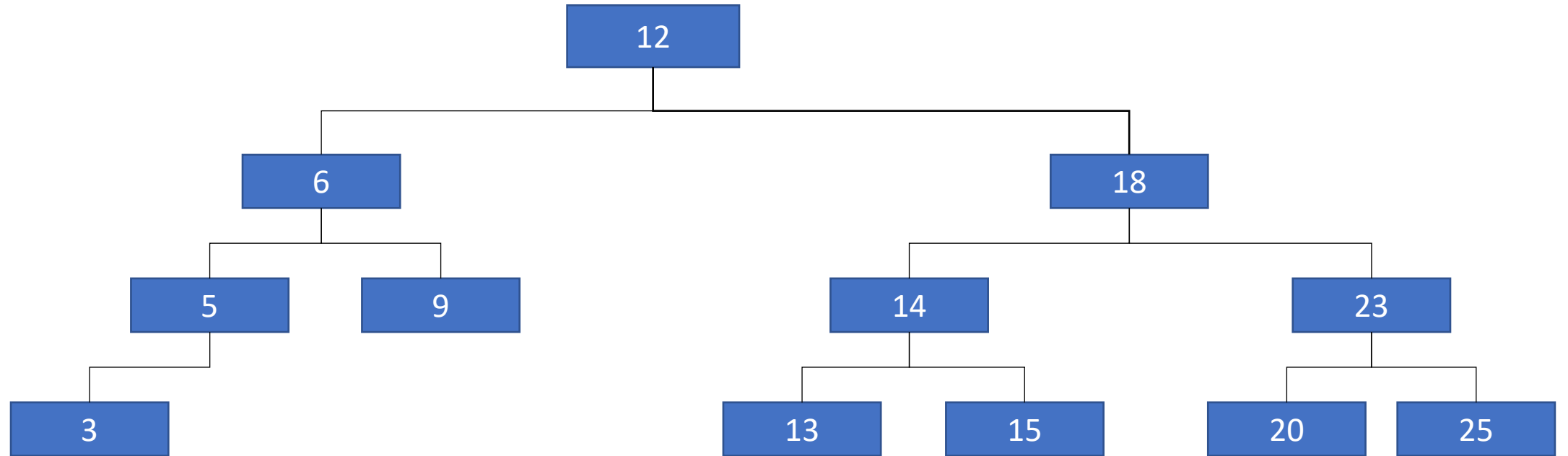


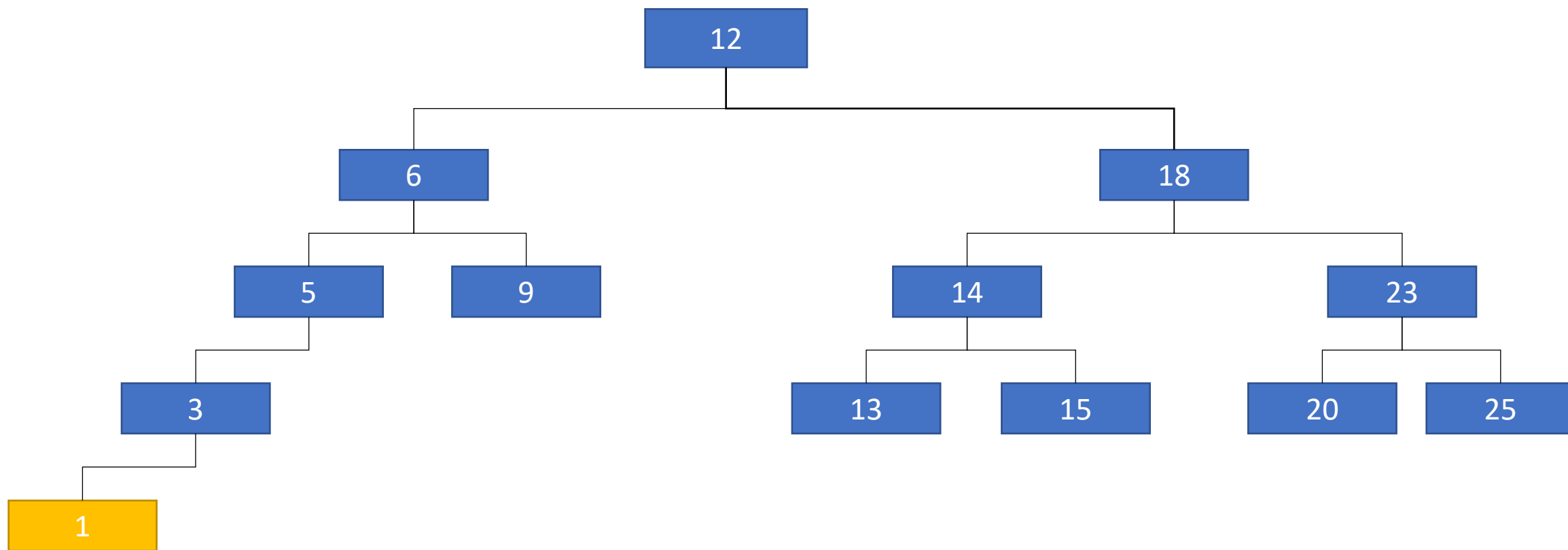


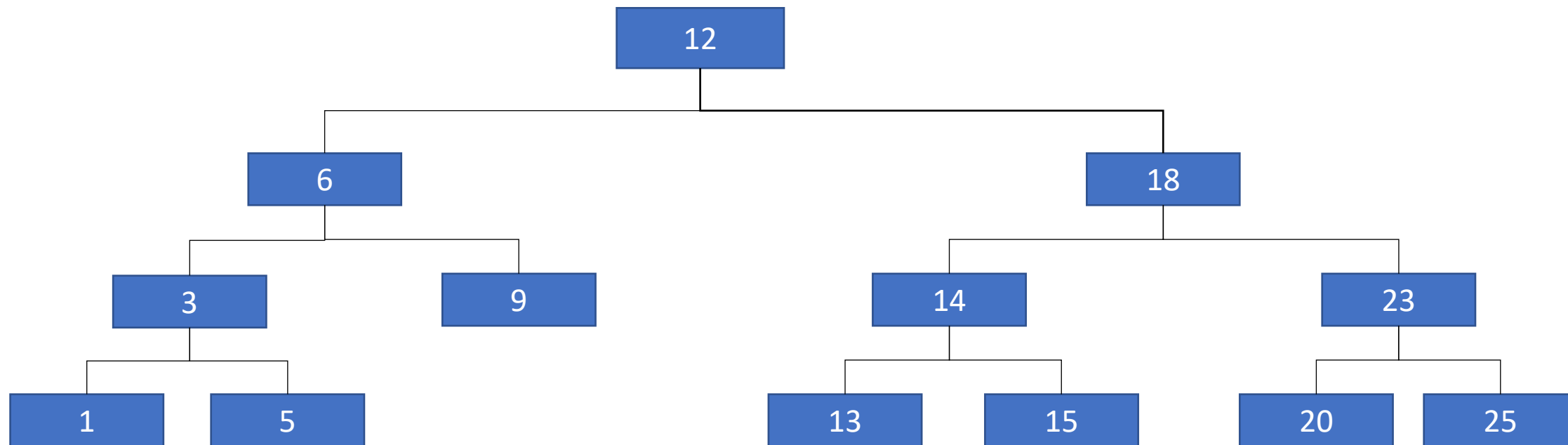


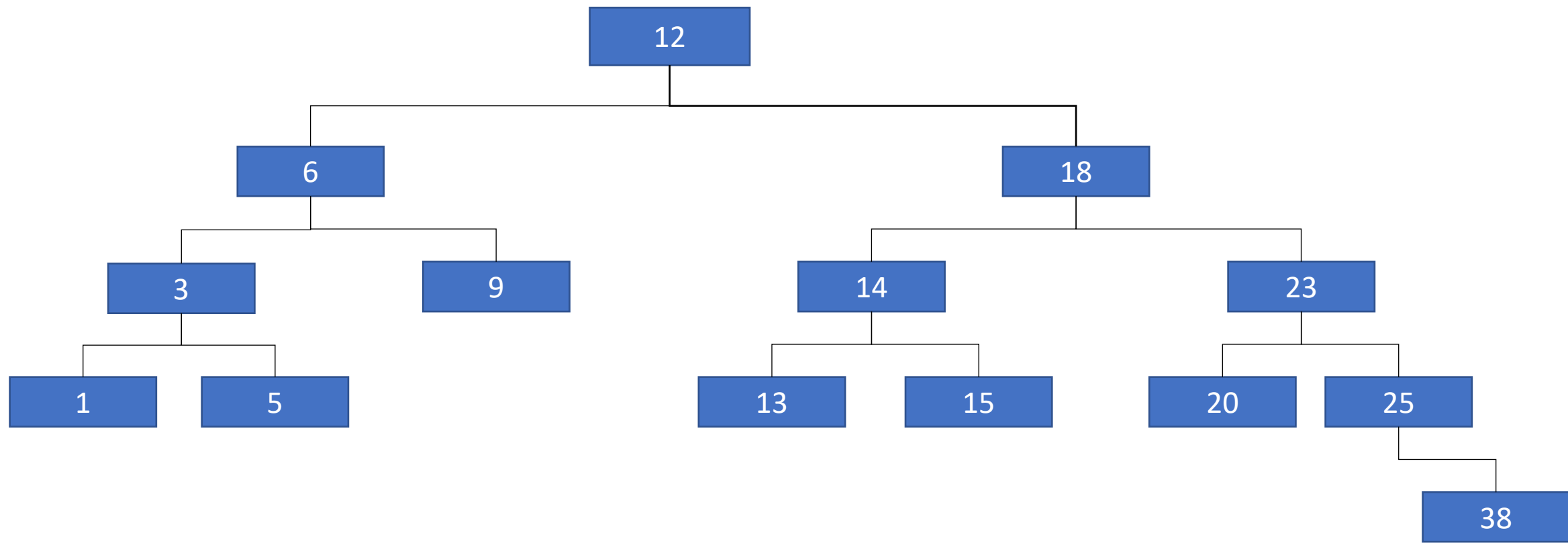


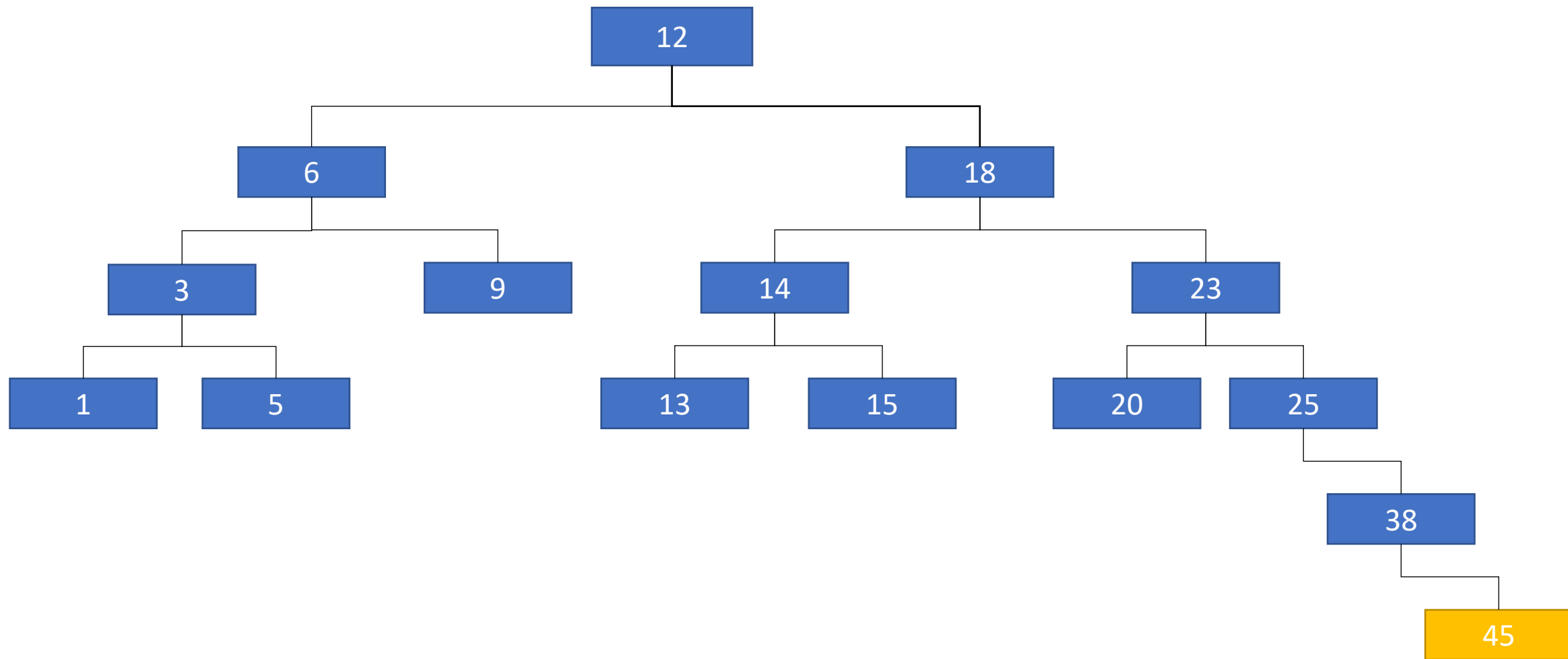


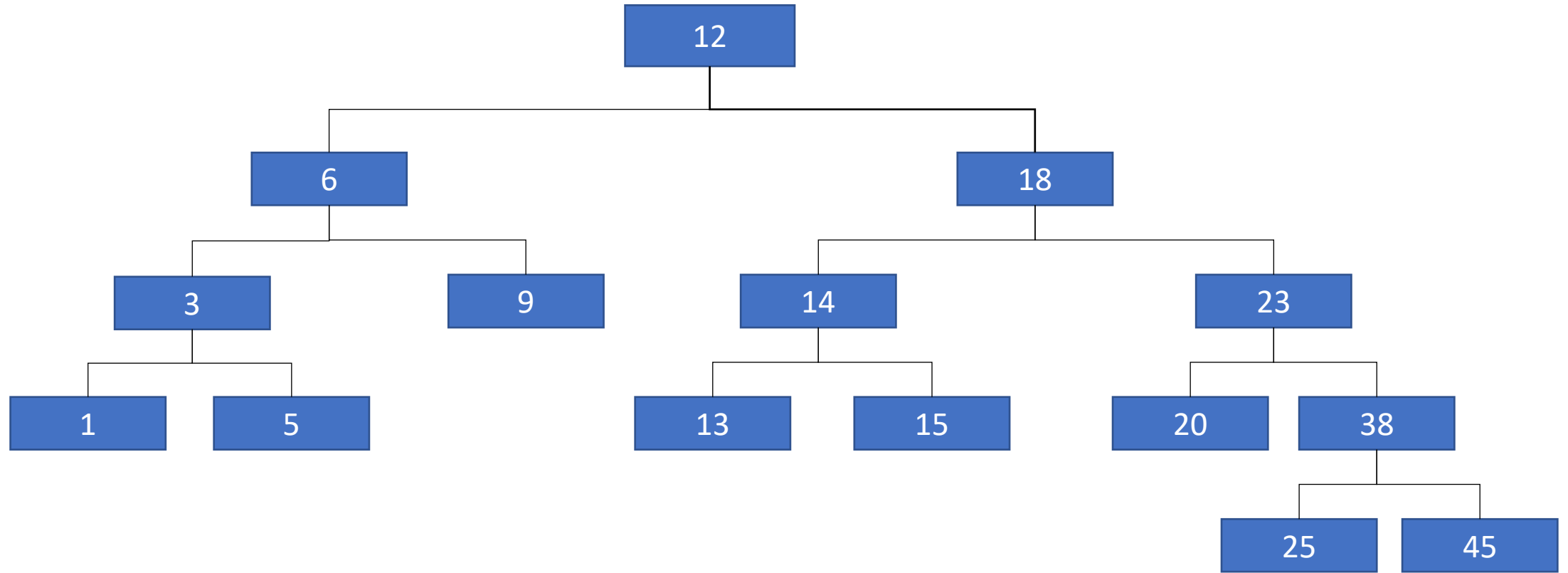


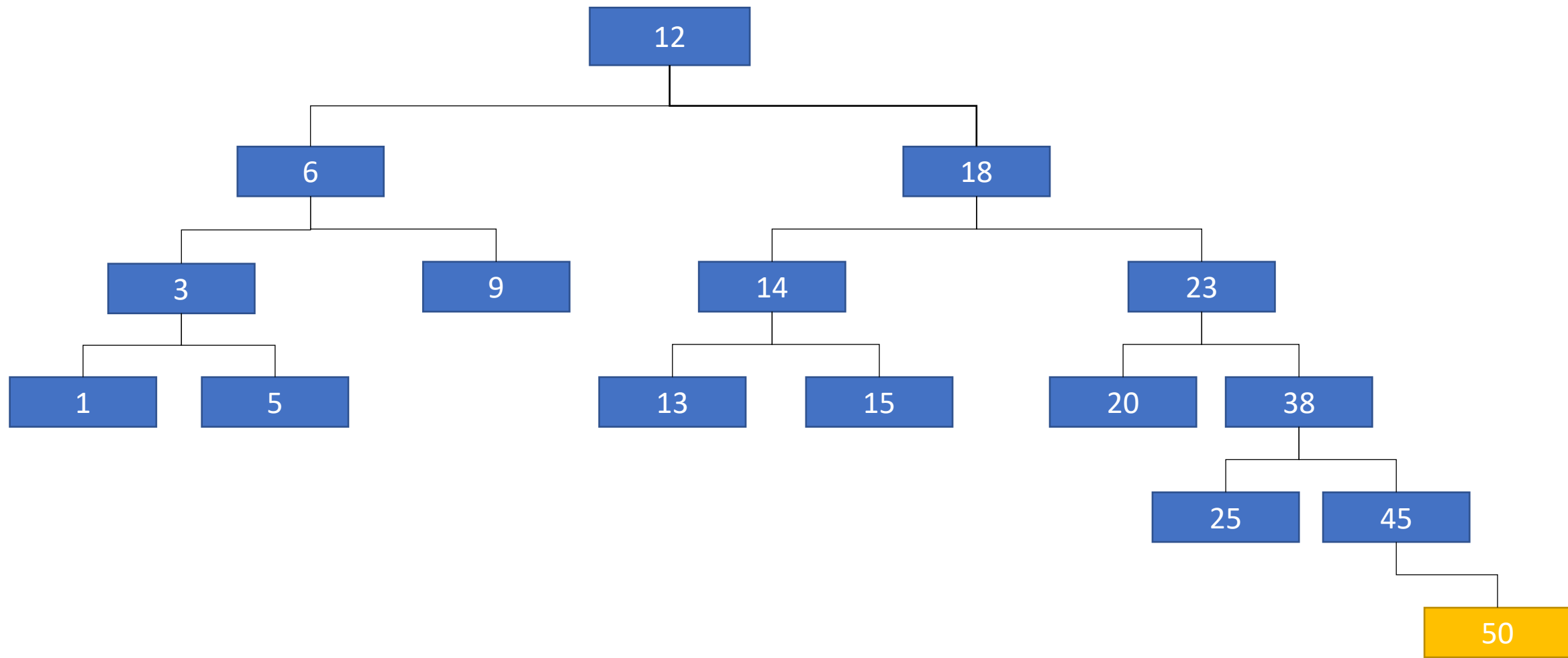




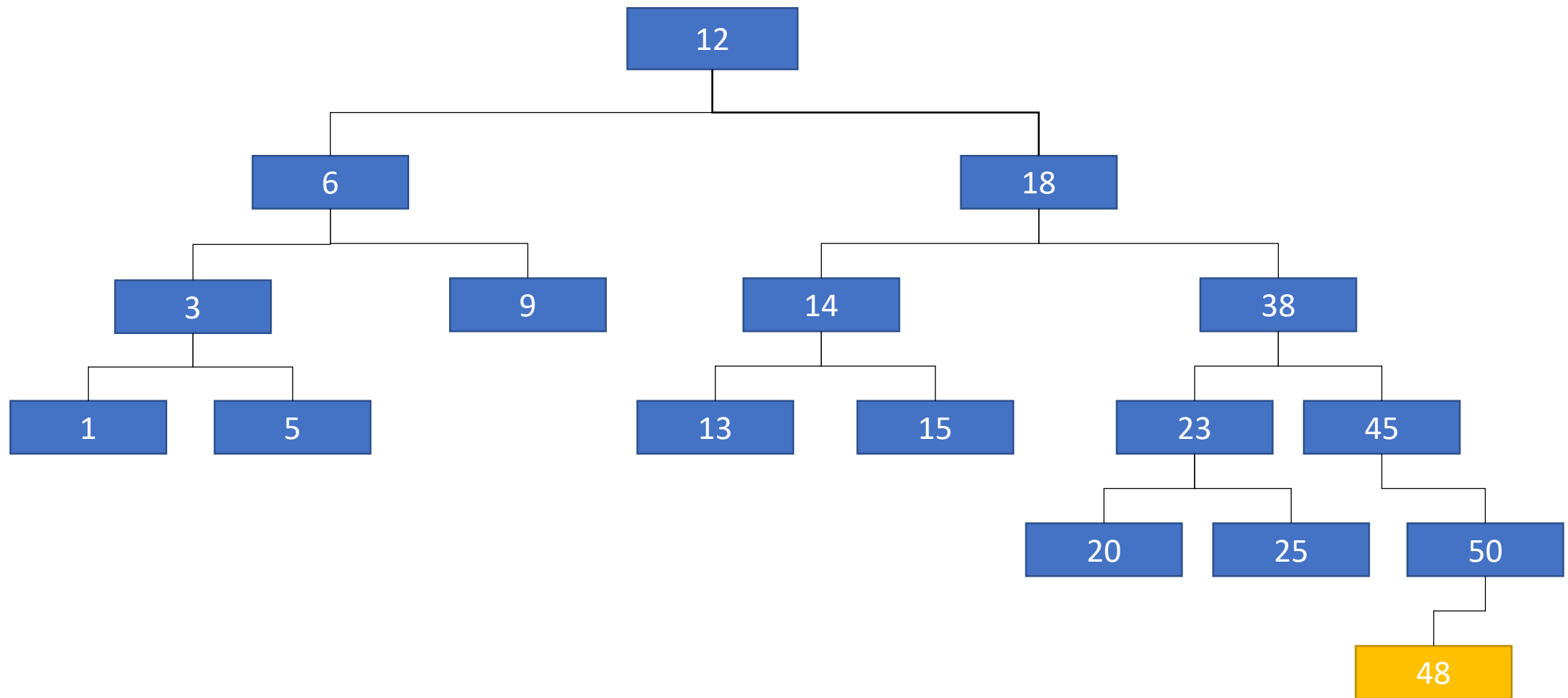


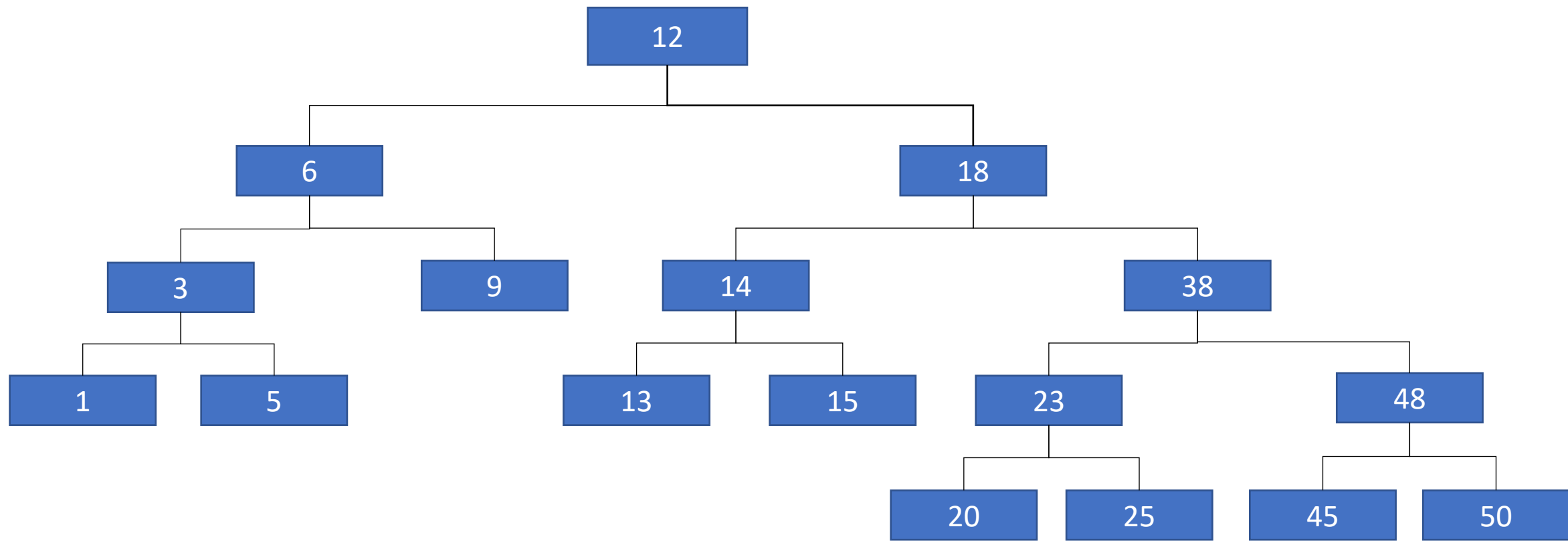


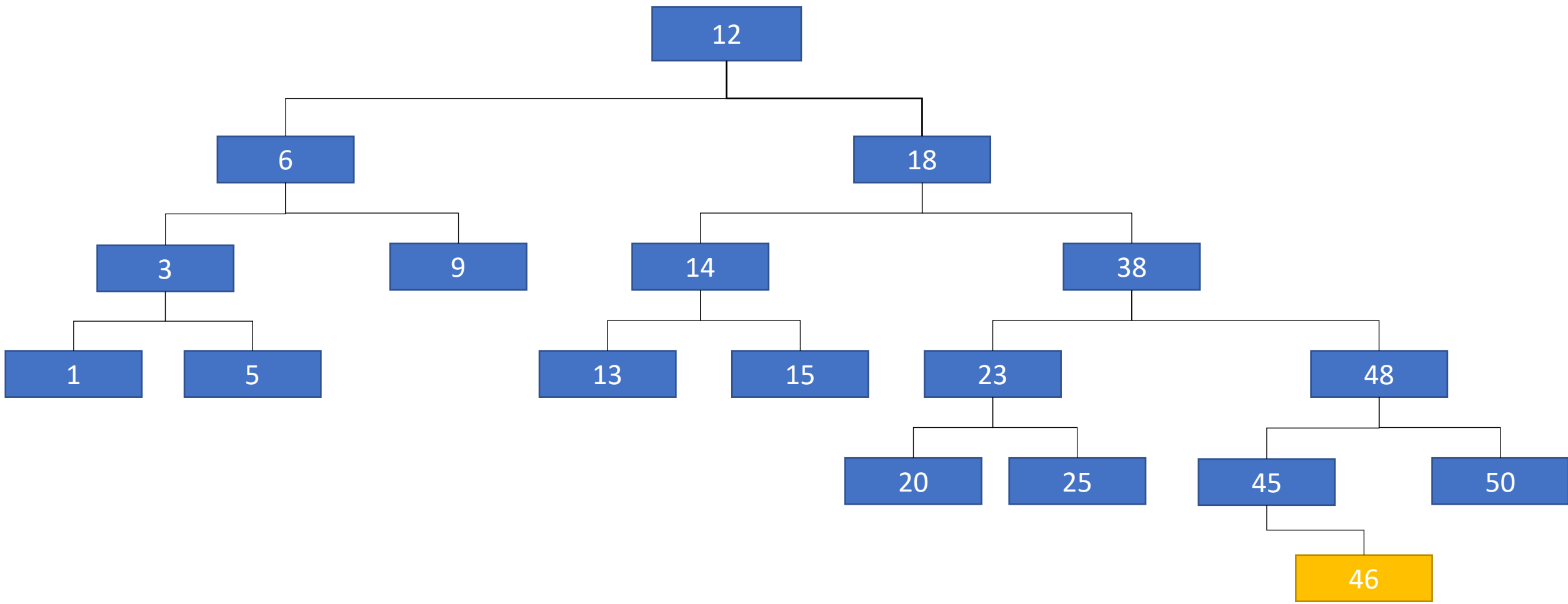


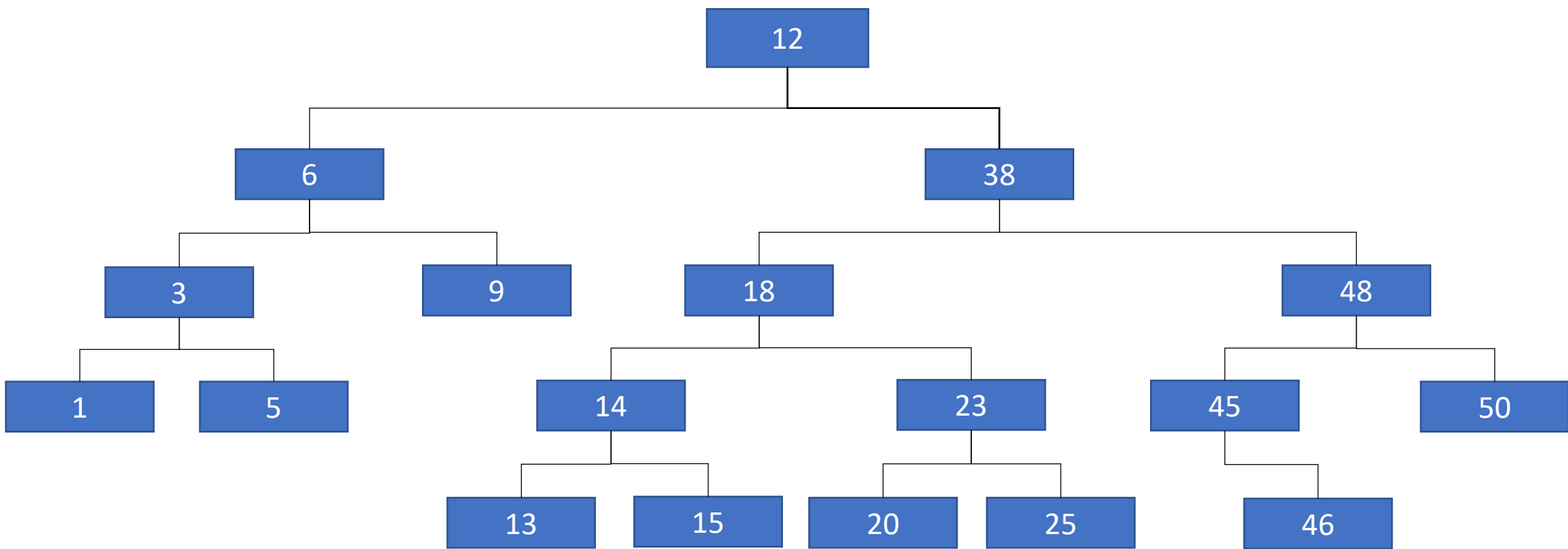


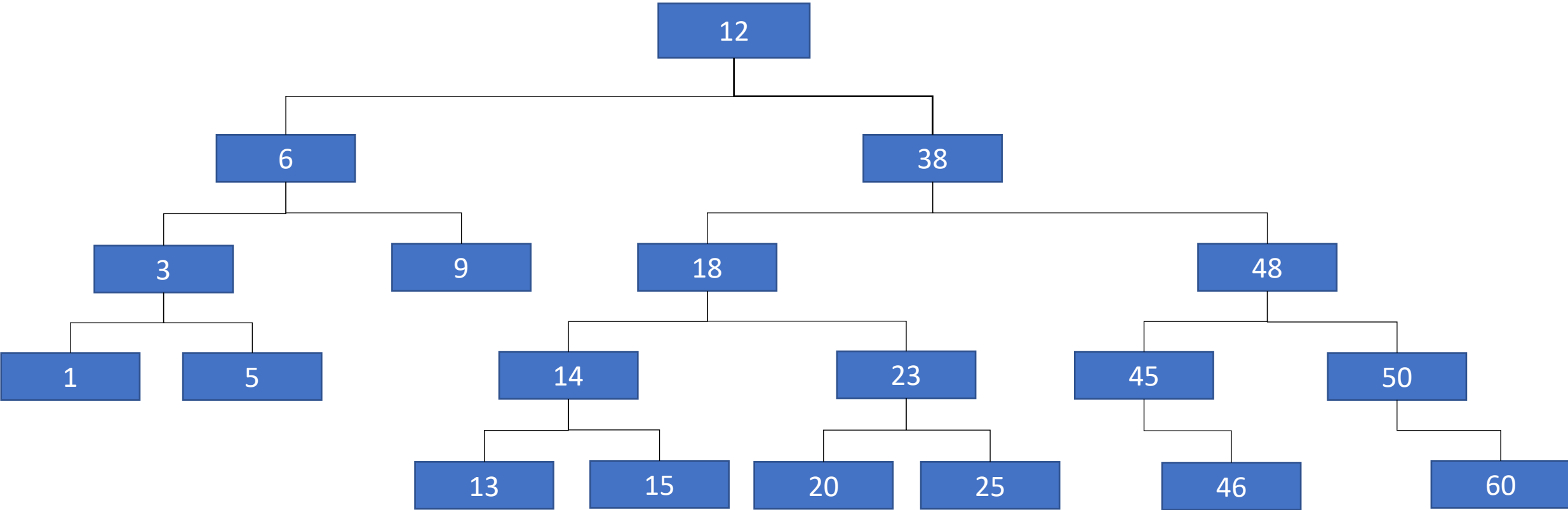






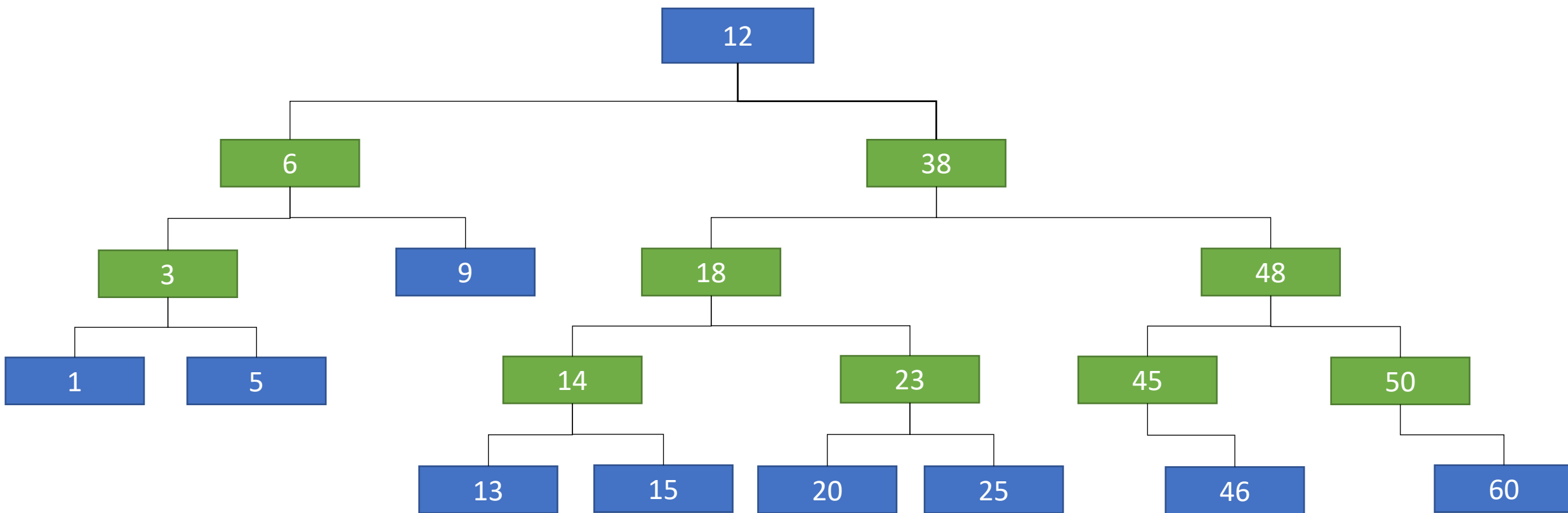






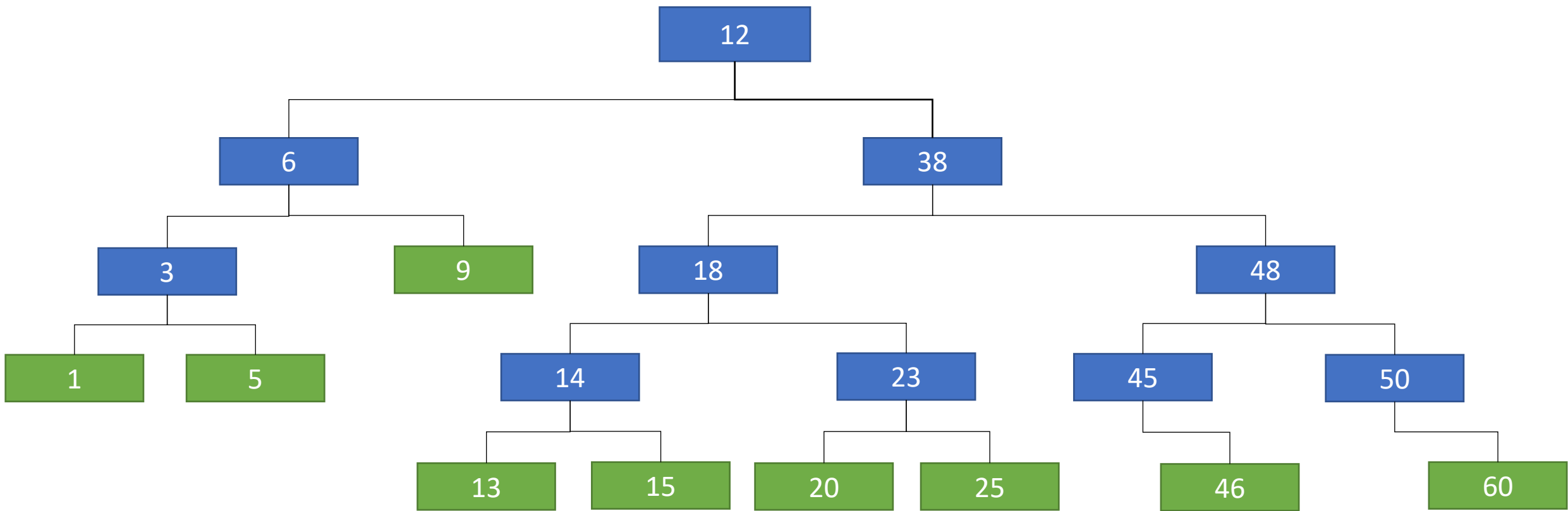
b) Qual a altura da árvore? 4

c) Quantos e quais são os nós internos da árvore? 9

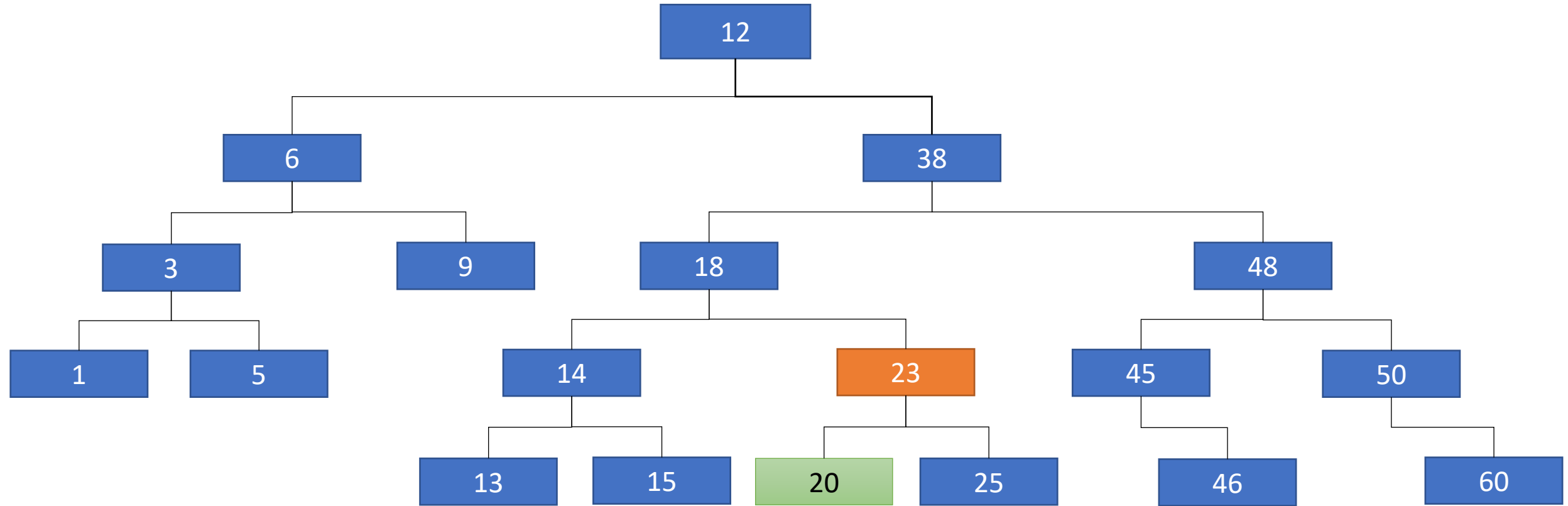


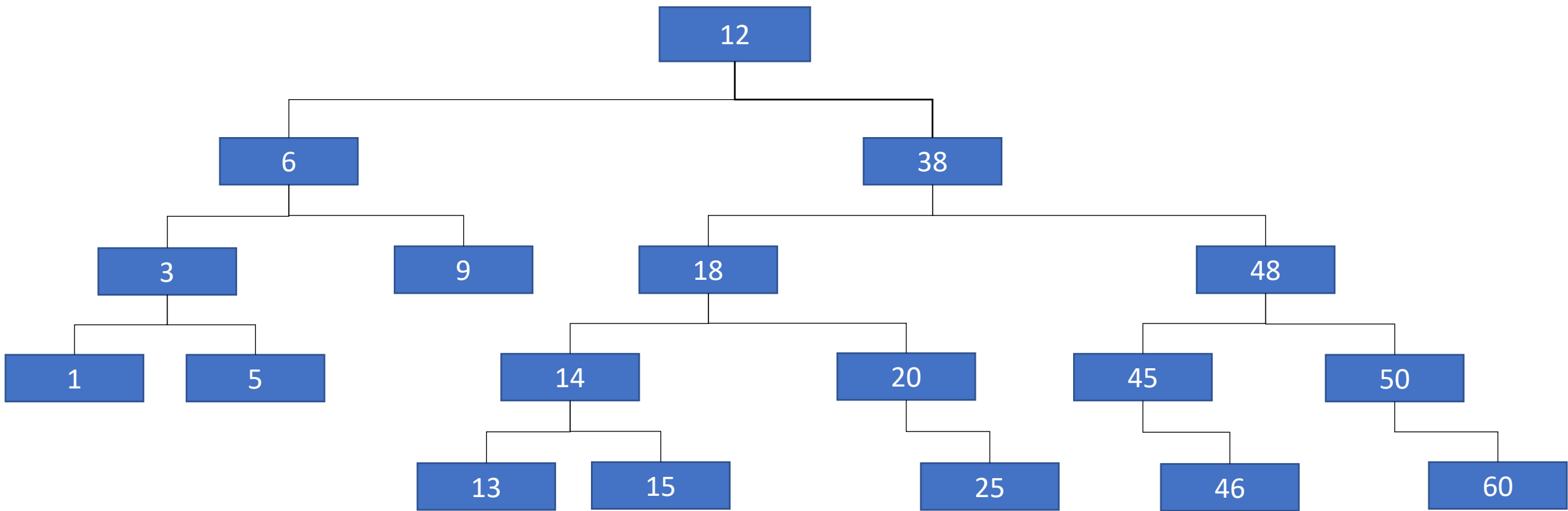


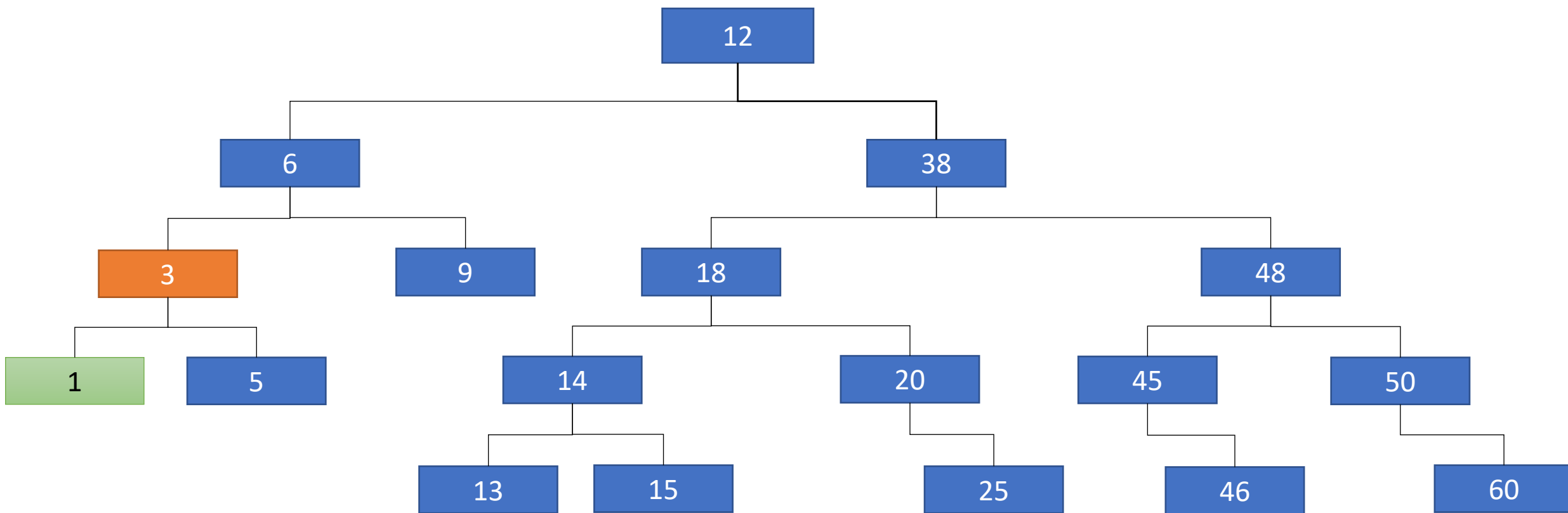
d) Quantos e quais são os nós folhas da árvore? 9

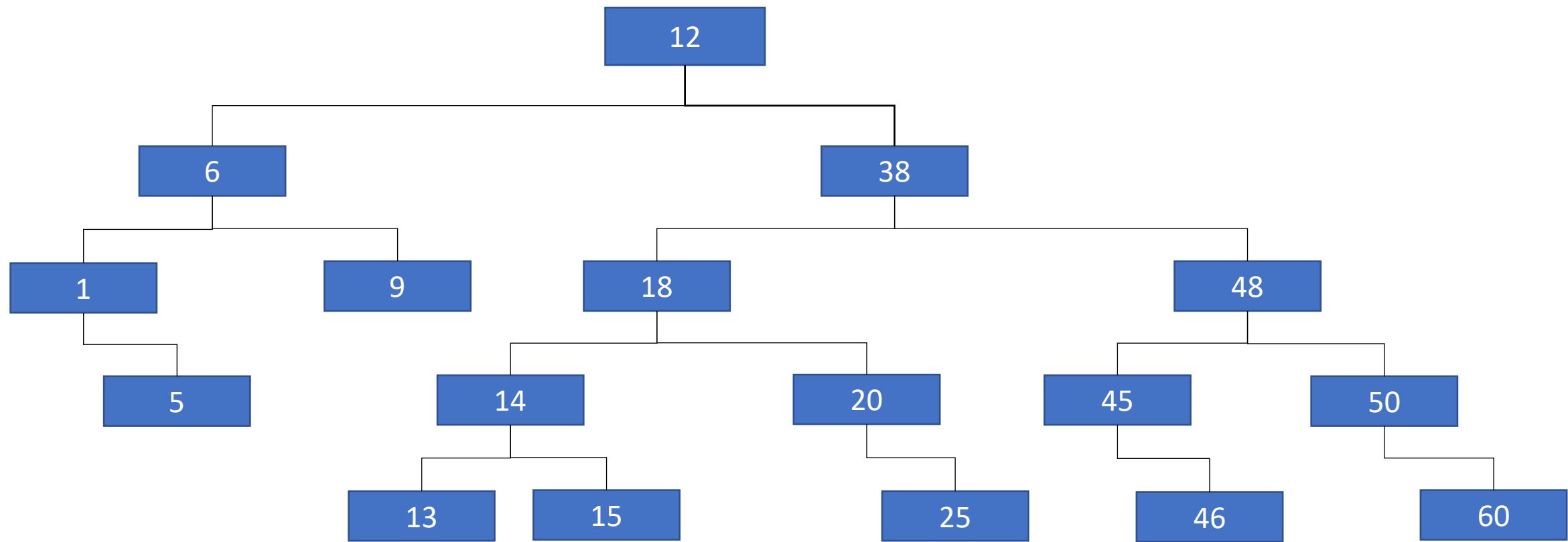


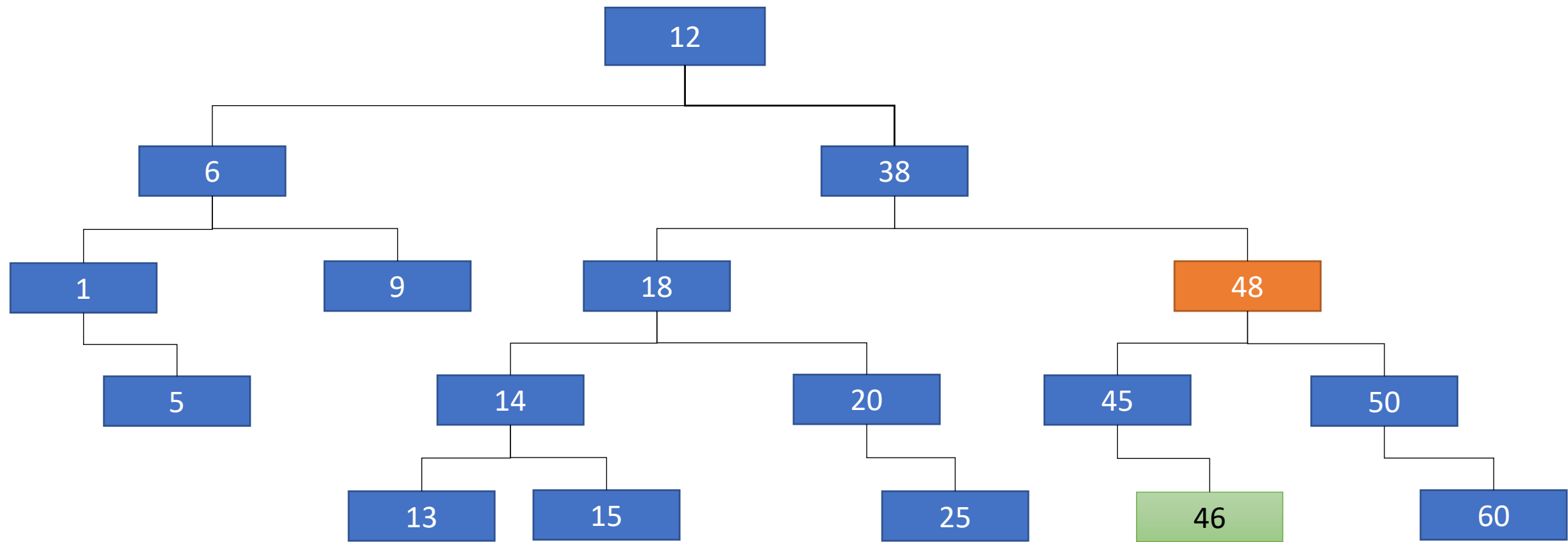
e) Faça o passo a passo para remover os seguintes elementos da árvore: 23, 3, 48, 15, 13. Lembrem-se que ao remover precisam verificar se a árvore continua balanceada após cada remoção;



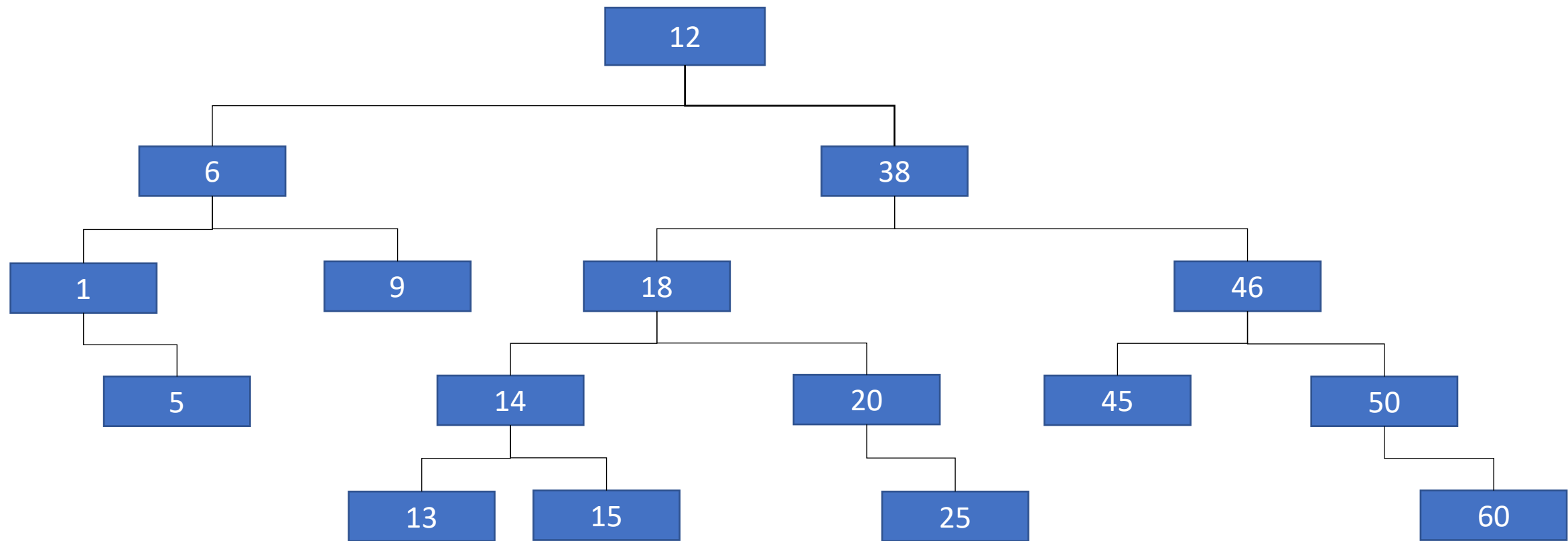


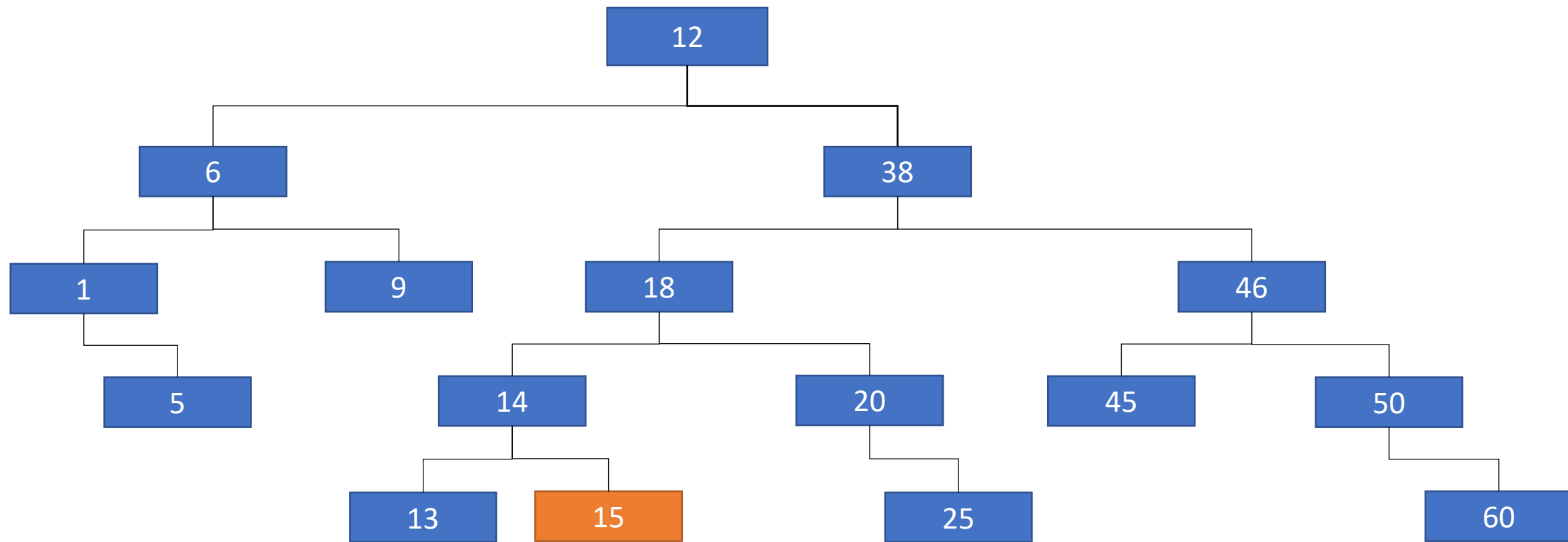


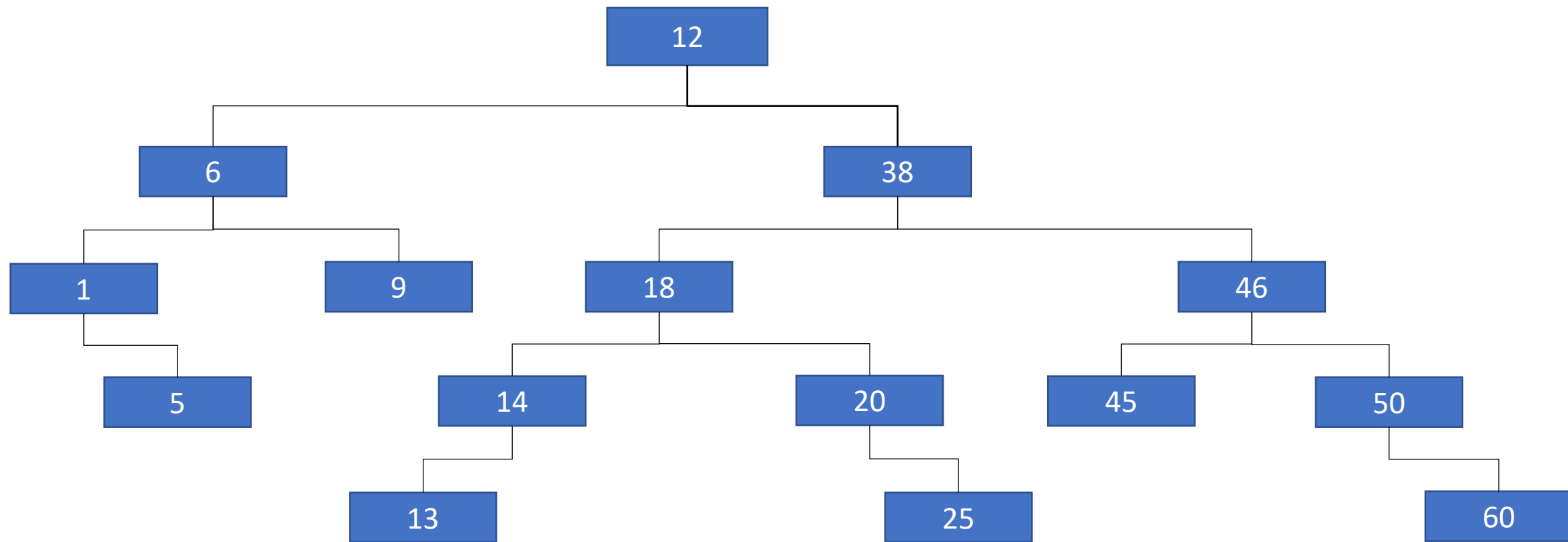


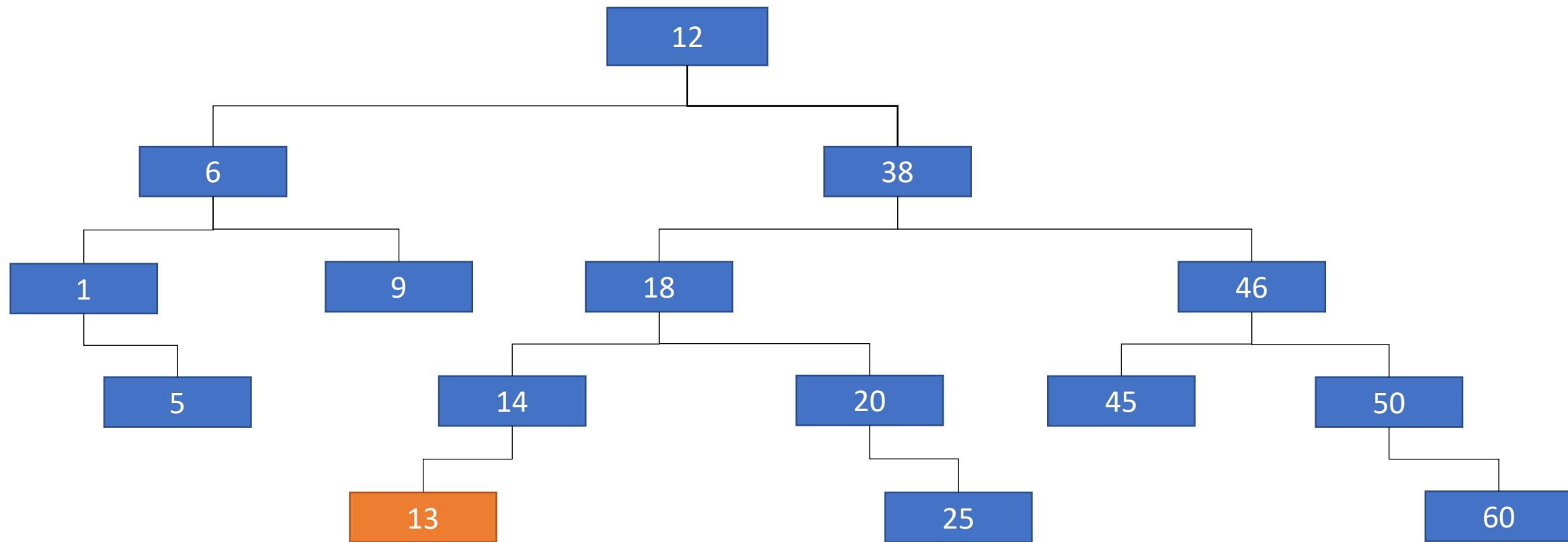


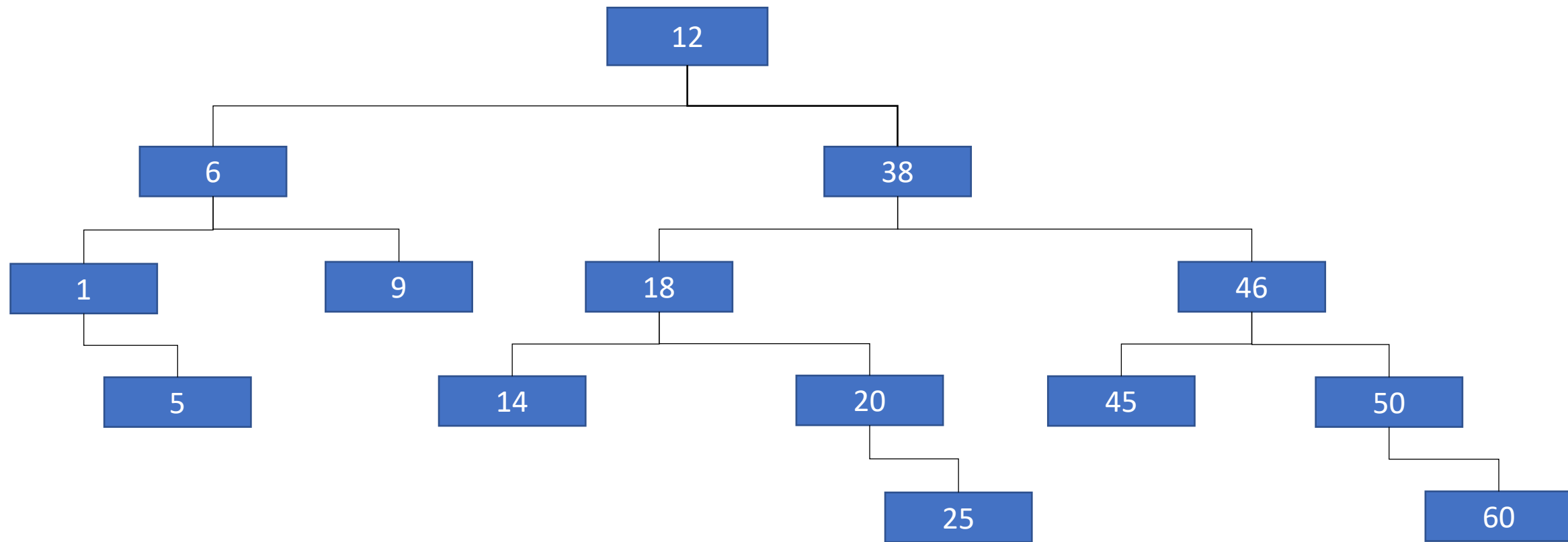












f) Imprima os elementos percorrendo a árvore em Pré-Ordem;

20 14 6 3 1 5 12 9 13 18 15 38 25 23 48 45 46 50  
60

g) Imprima os elementos percorrendo a árvore em In-ordem;

1 3 5 6 9 12 13 14 15 18 20 23 25 38 45 46 48 50  
60

h) Imprima os elementos percorrendo a árvore em Pós-ordem;

1 5 3 9 13 12 6 15 18 14 23 25 46 45 60 50 48 38  
20