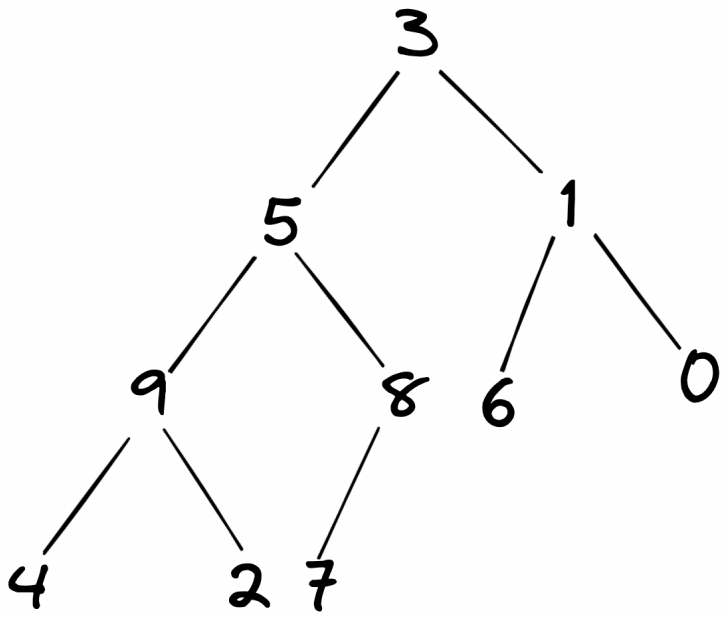

Say we traverse the first n elements and we multiply each element traversed to reach a total product k.

Example: Traverse the first n = 3 elements through breadth first search. Thus, the first three elements traversed are: 3, 5, 1. We then multiply each element to receive k = 3*5*1 = 15 as the total product.

Your answer for each question should be one of the following: pre-order, post-order, or in-order. Write “N/A” if the traversal is none of those three.

Answer the following with respect to the figure above:

1. Given that n = 4 and the total product k = 540, what traversal is used?

2. Given that n = 6 and the total product k = 20,160, what traversal is used?

3. Given that n = 3 and the total product k = 120, what traversal is used?

4. Given that n = 4 and the total product k = 360, what traversal is used?

a. ANSWER: pre-order traversal
b. EXPLANATION: pre-order traversal for the first 4 elements gives us: 3 --> 5 --> 9 --> 4. Thus, k = 3*5*9*4 = 540

c. ANSWER: post-order traversal
d. EXPLANATION: post-order traversal for the first 6 elements gives us: 4 --> 2 --> 9 --> 7 --> 8 --> 5. Thus, k = 4*2*9*7*8*5 = 20,160

e. ANSWER: N/A
f. EXPLANATION: This is none of the three traversals.
Post-order traversal: 4 --> 2 --> 9, k = 72 != 120
Pre-order traversal: 3 --> 5 --> 9, k = 135 != 120
In-order traversal: 4 --> 9 --> 2, k = 72 != 120
g. ANSWER: in-order traversal
h. EXPLANATION: in-order traversal for the first 4 elements gives us: 4 --> 9 --> 2 --> 5. Thus, k = 4*9*2*5 = 360