1. **Digital Electronics**
Find all ordered triplets (A,B,C) that make the following circuit TRUE.

![Diagram of a circuit with inputs A, B, and C, and an output symbol O.]

2. **Prefix/Postfix**
If A = 7, B = 9, C = 3, D = 4, E = 6, and F = 8, evaluate the following postfix expression:

```
A B C D E A - * / + F E - +
```

3. **Prefix/Postfix**
Find all integer values of X for which the following prefix expression has a value of zero:

```
* + X 4 - 6 X
```

4. **Data Structures**
When “Grumpy” is inserted into the following binary search tree, what is the new external path length of the tree?

```
Dopey

Doc  Sleepy

Bashful  Happy  Sneezy
```

5. **Data Structures**
Consider the following operations on an initially empty stack. If a POP is now performed, what value would be popped?

- PUSH (B)
- PUSH (I)
- PUSH (N)
- POP (X)
- PUSH (D)
- POP (X)
- PUSH (S)
- PUSH (X)