

1. What Does This Program Do?

LEN (B\$) = 100
 LEN (MID\$(A\$,52,12)) = 12
 LEN (MID\$(B\$,26,13)) = 13
 LEN (C\$) = 12 + 13 = 25
 LEN (D\$) = 13
 LEN (E\$) = 100 + 25 + 13 = 138

1. 138

2. Prefix-Infix-Postfix

A (B + D) / (C - E) translates as follows:
 A * (B + D) / (C - E) = A * (B D +) / (C - E) =
 (A B D + *) / (C E -) = ABD + * C E - /

2. ABD + * C E - /

3. Prefix-Infix-Postfix

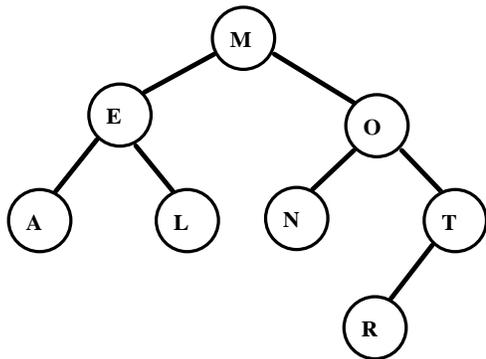
Converting + - + A * B C + A C C to infix gives:
 + - + A (B * C) (A + C) C = ((A + B C) - (A + C)) + C =
 (A + B C) - (A + C) + C . Substituting the given values gives:
 (2 + 4 * 8) - (2 + 8) + 8 = 34 - 10 + 8 = 32

3. 32

4. Data Structures

The tree is formed as shown and has an internal path length of 13.
 $13 = 2(1) + 4(2) + 3$

4. 13



5. Data Structures

A stack processes commands in LIFO order (Last In – First Out). The five items POPPED in order are B, C, A, F and E. The only item left in the stack is D.

5. D