Infix, Prefix, and Postfix Notation

1. Evaluate the following **prefix** expressions. Work from right to left.

   a. + + - 6 2 * 5 3 / 8 4   b. * + 8 / -12 * 2 3 6

2. Evaluate the following **postfix** expressions. Work from left to right.

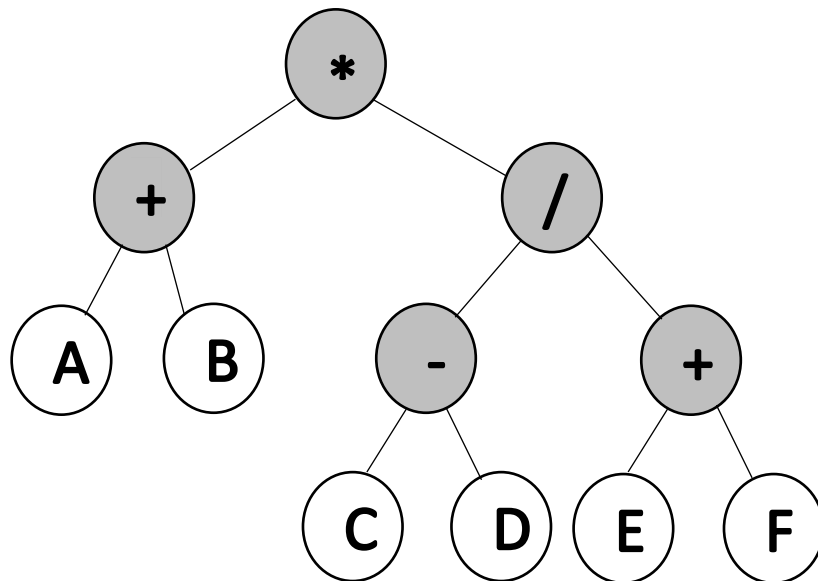   a. 6 3 / 9 7 4 3 - + + *   b. 8 5 + 6 2 / + 9 -

3. Use the following **infix** expressions to create an **expression tree**.

   a. (2 * 5) + (3 * 7) – (10 / 2)

b. `10 + 2 * 5 + 7`

4. Given the following expression tree.

a. Preform a **preorder** traversal to create a **prefix** expression.

b. Preform a **postorder** traversal to create a **postfix** expression.

5. Use the following prefix expression to create an expression tree, then use a **postorder** traversal to convert the **prefix** expression into a postfix expression.

   prefix: - / A B + + C D E   postfix: _____

6. Use the following prefix expression to create an expression tree, then use a **postorder** traversal to convert the **prefix** expression into a **postfix** expression.

   prefix: * + + A B C - D E   postfix: _____

7. Use the following postfix expression to create an expression tree, then use a **preorder** traversal to convert the **postfix** expression into a **prefix** expression.

   postfix: 7 5 – 4 2 + *   prefix: _____

8. Use the following postfix expression to create an expression tree, then use a **preorder** traversal to convert the **postfix** expression into a **prefix** expression.

   postfix: 2 9 3 - + 5 7 4 + * / prefix: _____