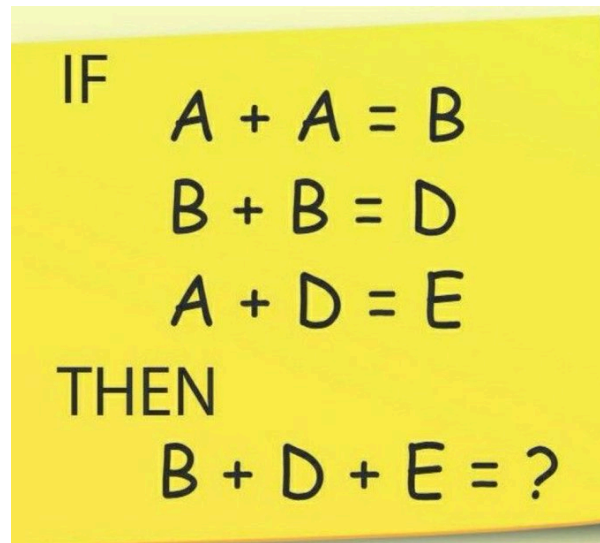


cpp-24

Equations 1 - evaluate (Algebra / C)



Can you solve this? ([Source: X](#))

1. Solve the problem algebraically first.
2. Write a C program that computes the first three equations.
3. Evaluate the last expression assuming $A = 1$.
4. Print the result.
5. Upload your solution as an Org-mode file.

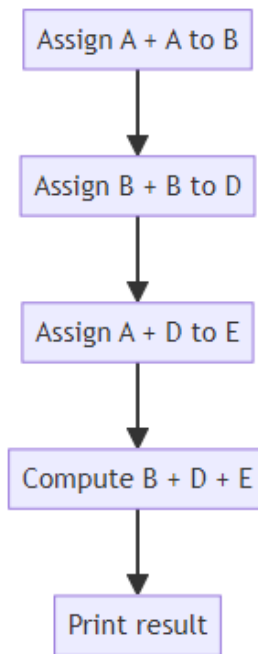
Solutions

- Algebraic proof:

$$\begin{aligned}
 B + D + E &= \\
 (A + A) + (B + B) + (A + D) &= \\
 A + A + (A + A) + (A + A) + A + (B + B) &= \\
 7 * A + (A + A) + (A + A) &= \\
 11 * A
 \end{aligned}$$

- Pseudocode/flowchart

```
graph TD
  A[Assign A + A to B] --> B[Assign B + B to D]
  B --> C[Assign A + D to E]
  C --> D[Compute B + D + E]
  D --> E[Print result]
```



- Simple C program:

```
#include <stdio.h>
int main()
{
    /* If 2A = B, 2B = D and A+D=E
       Then B + D + E = A * 11 */
    int A = 1; // initialize A
    int B = A + A;
    int D = B + B;
    int E = A + D;
    printf("%d\n", B + D + E); // B + D + E = ?
    return 0;
}
```

11

Author: Marcus Birkenkrahe

Created: 2024-03-02 Sat 18:21

[Validate](#)