

# Solving Arithmetic Equations in Assembly

Start

Identify the Arithmetic Equation

Translate the Equation to Assembly Logic

Write the Assembly Code

Assemble the Code

Link the Object File

Test the Executable

Debug and Inspect Output

Validate the Result

Document and Repeat

Finish

- Determine the mathematical operation to implement (e.g., addition, multiplication, negation, etc.)
- Assign values to variables as per the problem statement.

- Break down the equation into individual operations compatible with assembly instructions.
- Plan how to use registers and memory variables.

- Declare variables in the appropriate section (.data or .bss).
- Implement operations step by step according to your translation.

- Use an assembler (e.g., NASM) to convert the source code to an object file.

- Use a linker to produce an executable.

- Run the program to ensure it executes without errors.

- Use a debugger (e.g., GDB) to run the program.
- Inspect key variables (like `result`) to verify correct computation.

- Compare the output with the expected result of the original equation.
- If output is incorrect, return to step 4 to revise the code.

- Document the process and outcome.
- Repeat the process for each new equation.