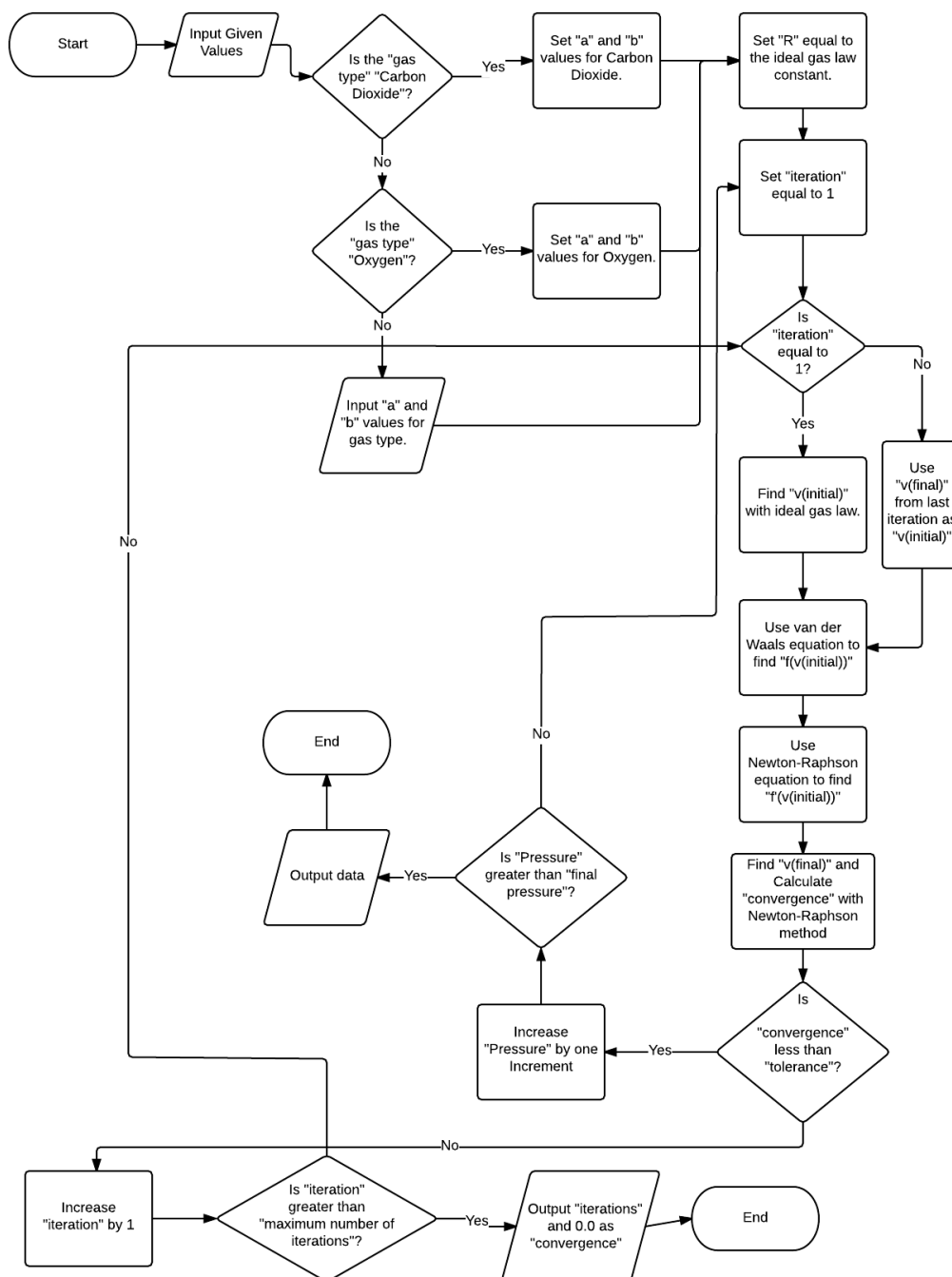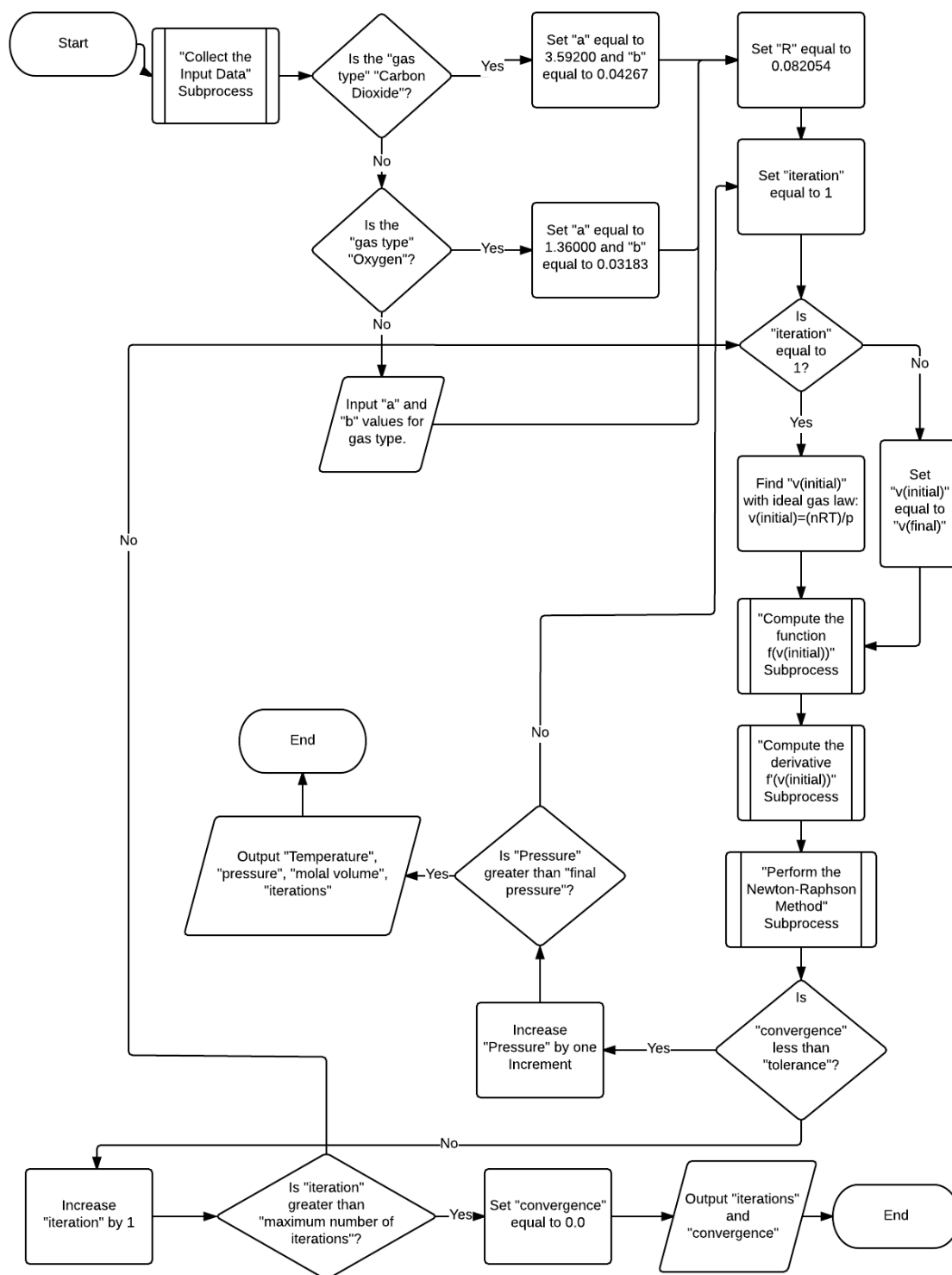1. Create a flowchart to demonstrate how the molal volume of a gas changes with pressure at a constant temperature.
2. Low Detail Flowchart
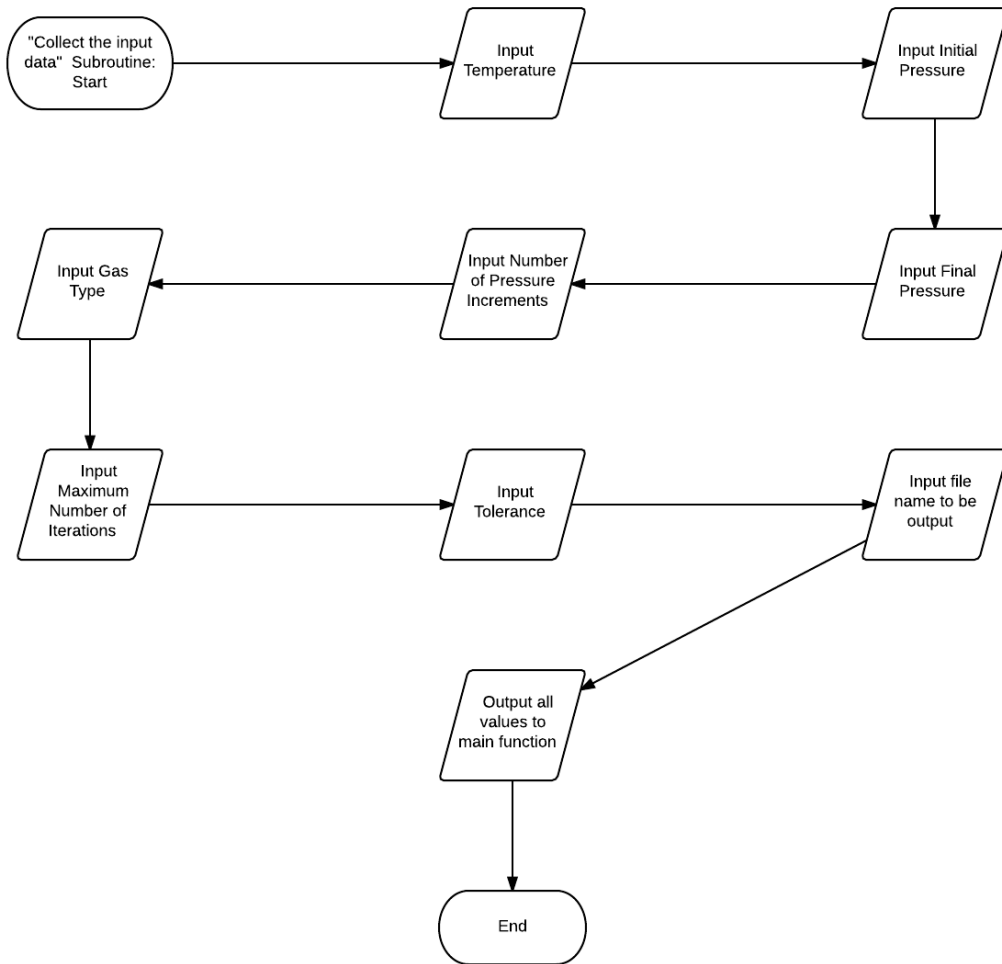
3. High Detail Flowchart

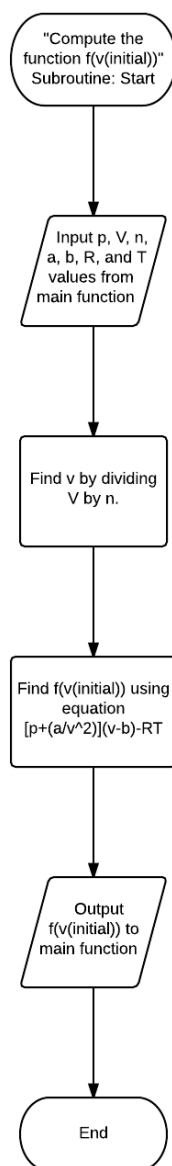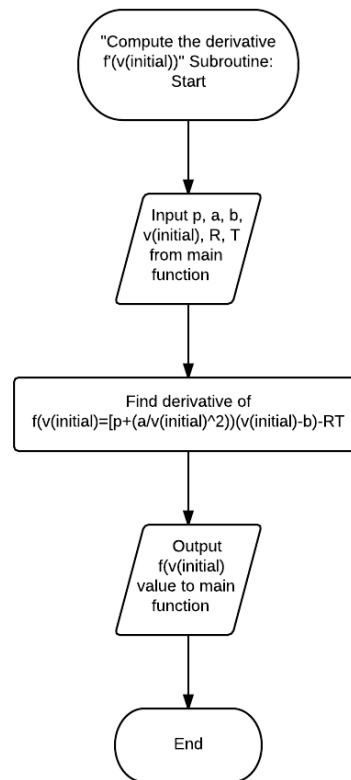4. Sub-process Flowcharts
    a. Collect the Input Data

```
"Collect the input        →   Input          →   Input Initial
data" Subroutine:             Temperature        Pressure
Start                                                │
                                                     ▼
Input Gas    ←   Input Number   ←   Input Final
Type             of Pressure         Pressure
  │              Increments
  ▼
Input            →   Input          →   Input file
Maximum             Tolerance           name to be
Number of                               output
Iterations                                 │
                    Output all    ←────────┘
                    values to
                    main function
                         │
                         ▼
                       End
```

b. Compute the Function f(v(initial))

"Compute the function f(v(initial))" Subroutine: Start

Input p, V, n, a, b, R, and T values from main function

Find v by dividing V by n.

Find f(v(initial)) using equation [p+(a/v^2)](v-b)-RT

Output f(v(initial)) to main function

End

c. Compute the derivative f'(v(initial))

d. Perform the Newton-Raphson method (including the convergence check)