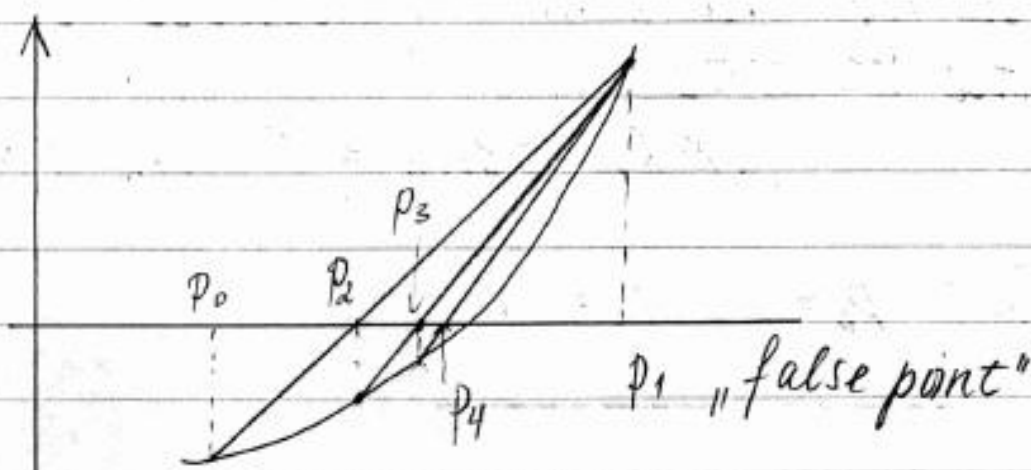


III The Method of False Position

The method of False Position:

- similar to the Secant method, but
- includes a test to ensure that the root is bracketed between successive iterations



1) We choose p_0, p_1 so that

$$f(p_0)f(p_1) < 0$$

2) We draw the secant line that connects $(p_0, f(p_0))$ and $(p_1, f(p_1))$. The point where this line crosses the x-axis we take as p_2 .

3) Check

$$f(p_2)f(p_1)$$

If $f(p_2)f(p_1) < 0$ then p_3 is the intersection of the line $(p_1, f(p_1)), (p_2, f(p_2))$ with the x-axis.

If $f(p_2)f(p_1) > 0$ then p_3 is the intersection of the line $(p_0, f(p_0))$ and $(p_2, f(p_2))$ and the x-axis.

• Interchange $p_0 \leftrightarrow p_1$.