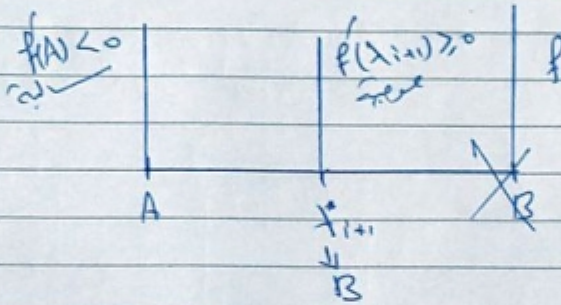
6- Find the new point:-

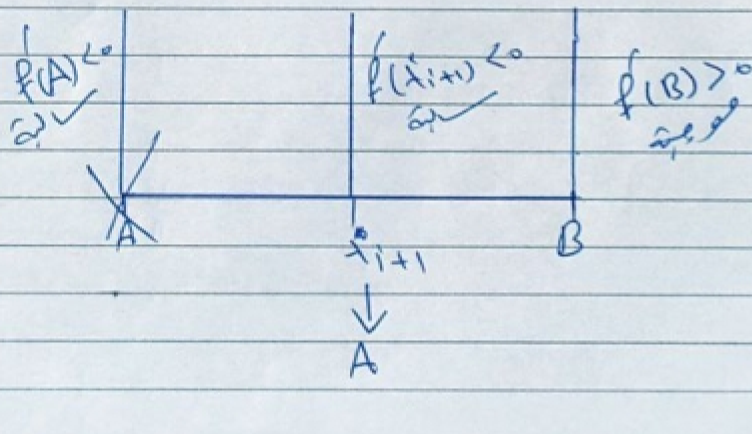
$$\lambda_{i+1} = A - \frac{f'(A)\,(B-A)}{f'(B) - f'(A)}$$

7- Test Convergence if $|f'(\lambda_{i+1})| \le \epsilon$ is satisfied $\lambda^* = \lambda_{i+1}$. otherwi's go to step (8).

8- If $f'(\lambda_{i+1}) \geq 0$, set new $B = \lambda_{i+1}$, $f'(B) = f'(\lambda_{i+1})$ and go to step (6).



9- If $f'(\lambda_{i+1}) < 0$, set new $A = \lambda_{i+1}$, $f'(A) = f'(\lambda_{i+1})$ and go to step (6).



Example:- Find the minimum of the function

$$f(\lambda) = \lambda^5 - 5\lambda^3 - 20\lambda + 5$$

using secant method, $\lambda_0 = 0$ and $t_0 = 0.1$ $\epsilon = 0.05$.

Solution:- $A = \lambda_0 = 0$

$f'(\lambda) = 5\lambda^4 - 15\lambda^2 - 20$

$f'(A) = f'(\lambda_0) = f'(0) = -20 < 0$ سالب

$B = \lambda_0 + t_0 = 0 + 0.1 = 0.1$

$f'(B) = f'(0.1) = -20.1495 < 0$ سالب

$A = 0.1 \qquad f'(A) = -20.1495$

$B = \lambda_0 + 2t_0 = 0 + 2(0.1) = 0.2$

$f'(B) = f'(0.2) = -20.592 < 0$ سالب

$A = 0.2 \qquad f'A = -20.592$

$B = \lambda_0 + 4t_0 = 0 + 4(0.1) = 0.4$

$f'(B) = f'(0.4) = -22.272 < 0$ سالب

$A = 0.4 \qquad f'(A) = -22.272$

~~Ans~~

$B = \lambda_0 + 8t_0 = 0 + 8(0.1) = 0.8$

$f'(B) = f'(0.8) = -27.552 < 0$ سالب