Bisection Method: Background

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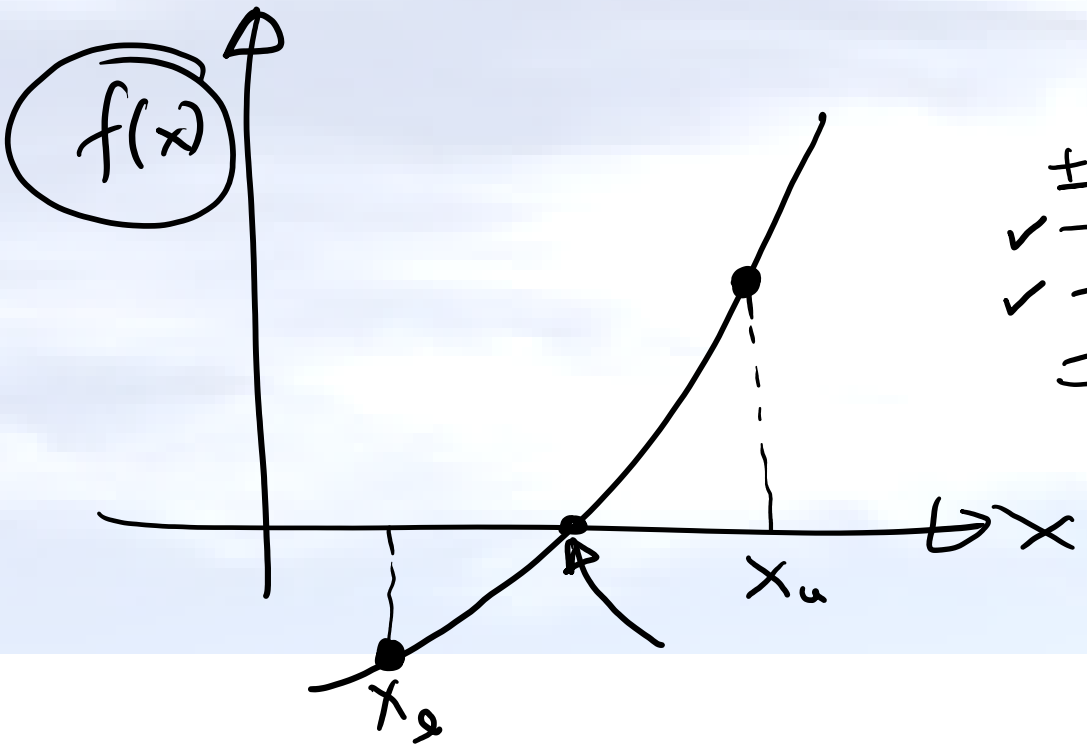
If we have an eqn. $f(x) = 0$, then if $f(x)$ is real & continuous, and $f(x_l)\, f(x_u) < 0$, then at least one root lies between x_l and x_u.

$f(x) = 0$



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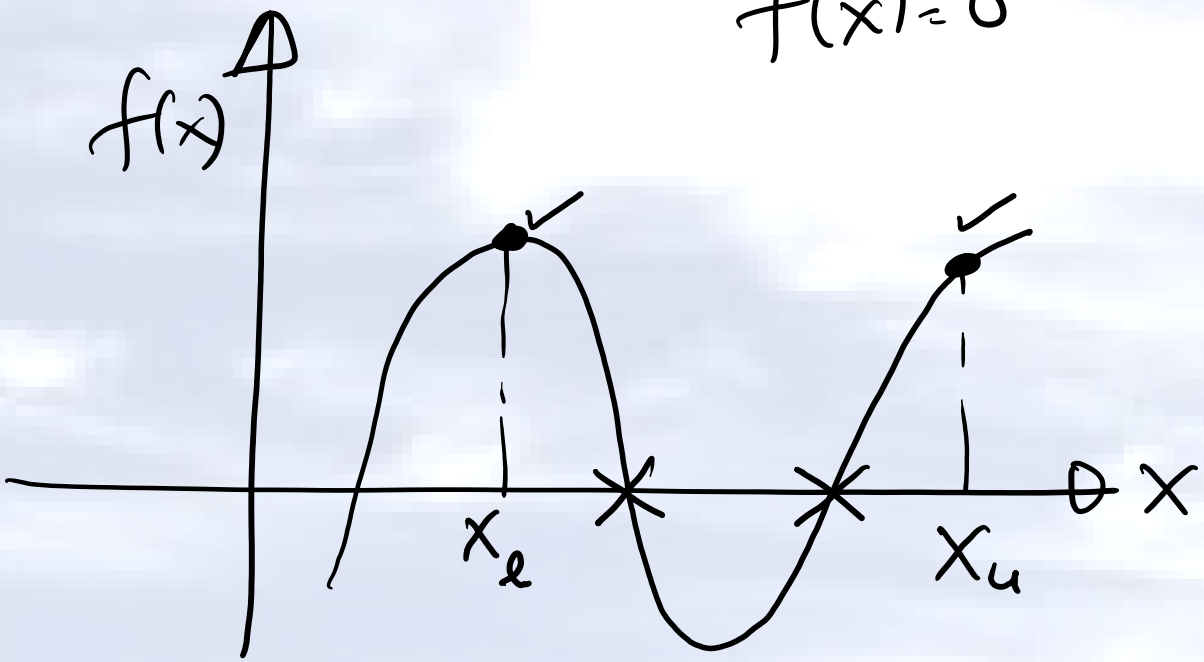
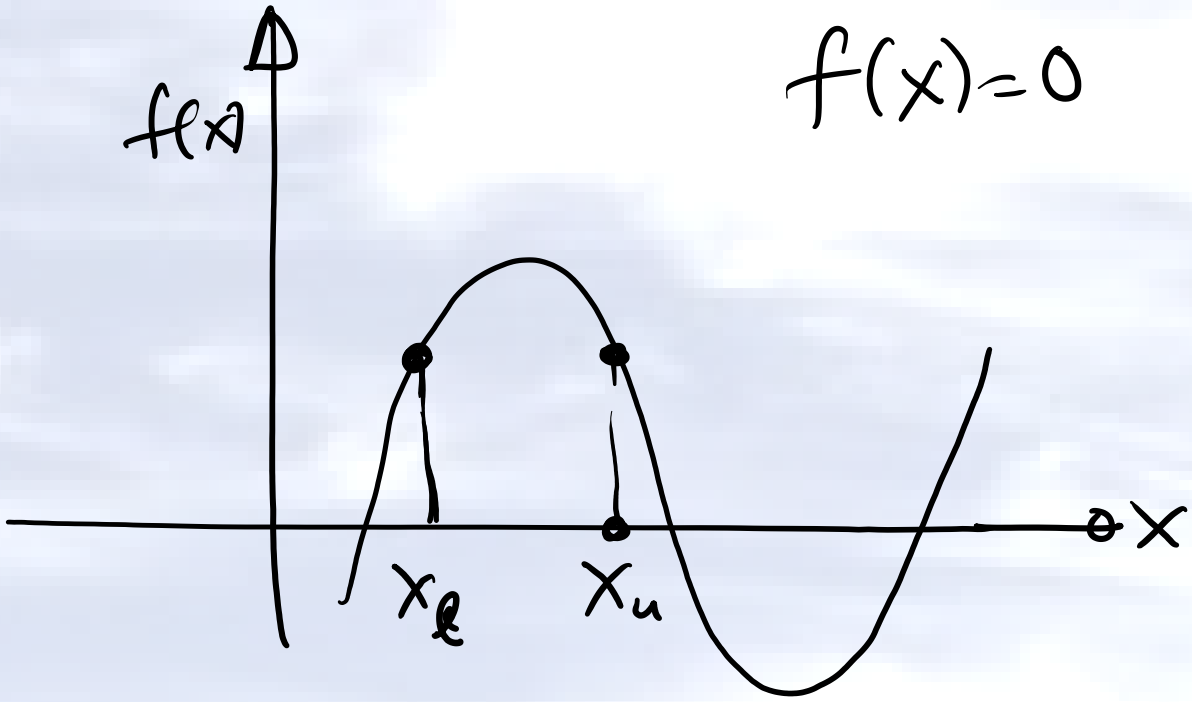
$f(x) = 0$



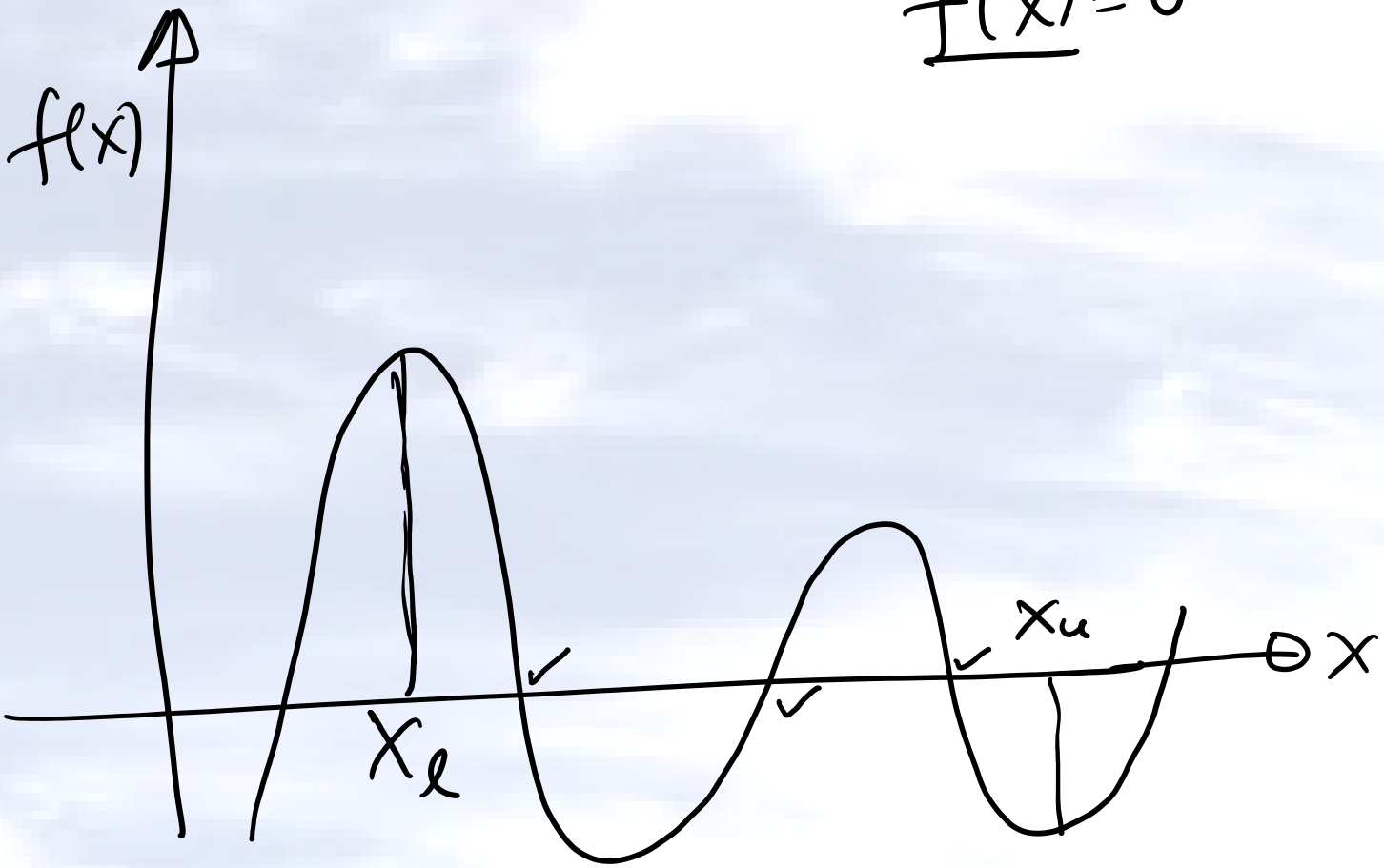
$$f(x_2)\, f(x_4) > 0$$



$f(x) = 0$

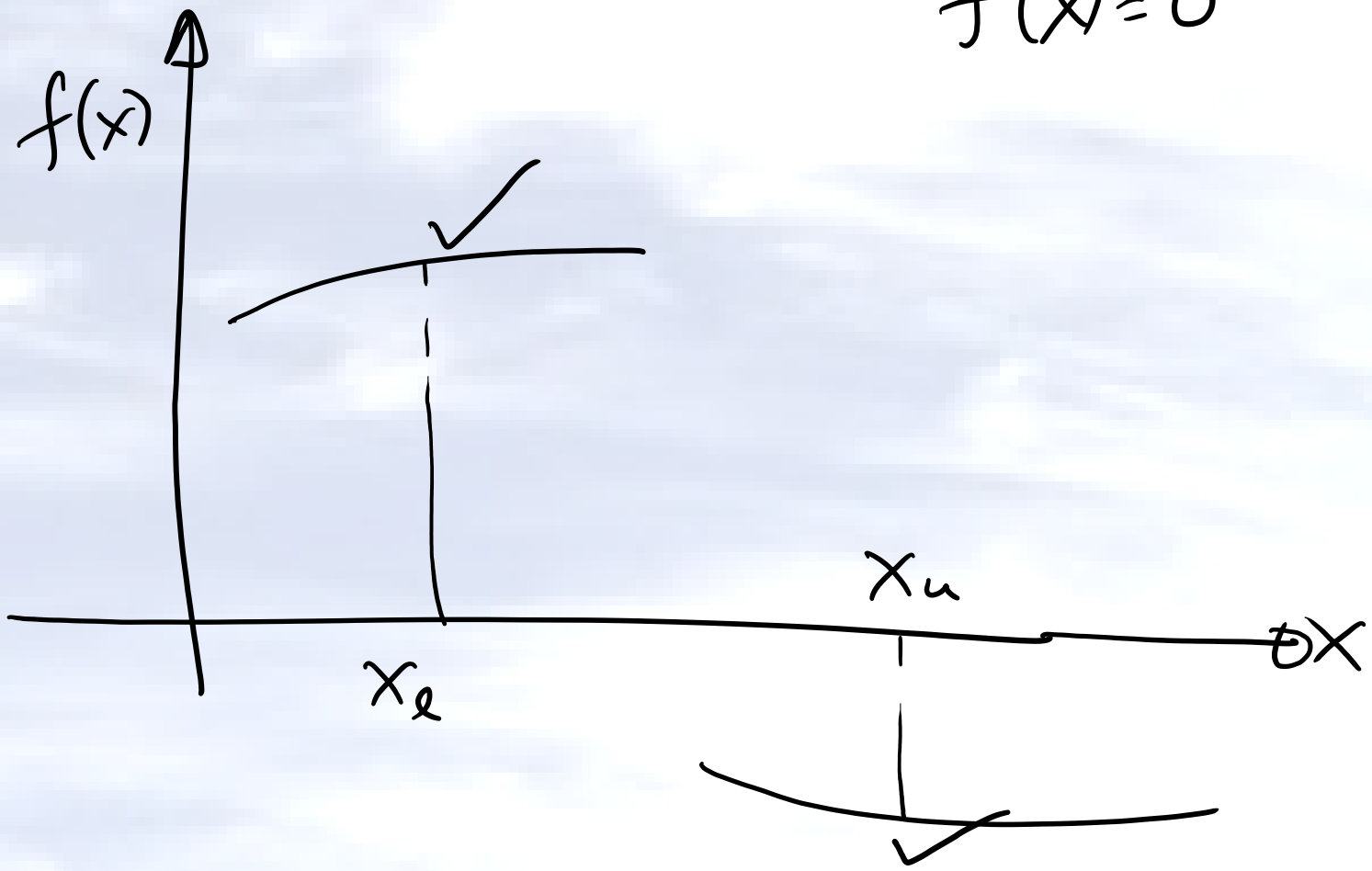
$$f(x_l)\, f(x_u) > 0$$

$f(x) = 0$



$$f(x_l) f(x_u) < 0$$

$f(x)=0$



$$f(x_e)f(x_n)<0$$

END

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