

Parallel plates [$V(0) = V_0, V(d) = 0$] with uniform, fixed charge ρ_0 .

x normalized by d , V normalized by V_0 , E normalized by $\frac{V_0}{d}$, and $A = \frac{\rho_0 d^2}{2 \epsilon_0 V_0}$.

> restart;

> $V := (A, x) \rightarrow -A \cdot x^2 + (A - 1) \cdot x + 1$; $E(A, x) = -\frac{d}{dx} V(A, x)$;

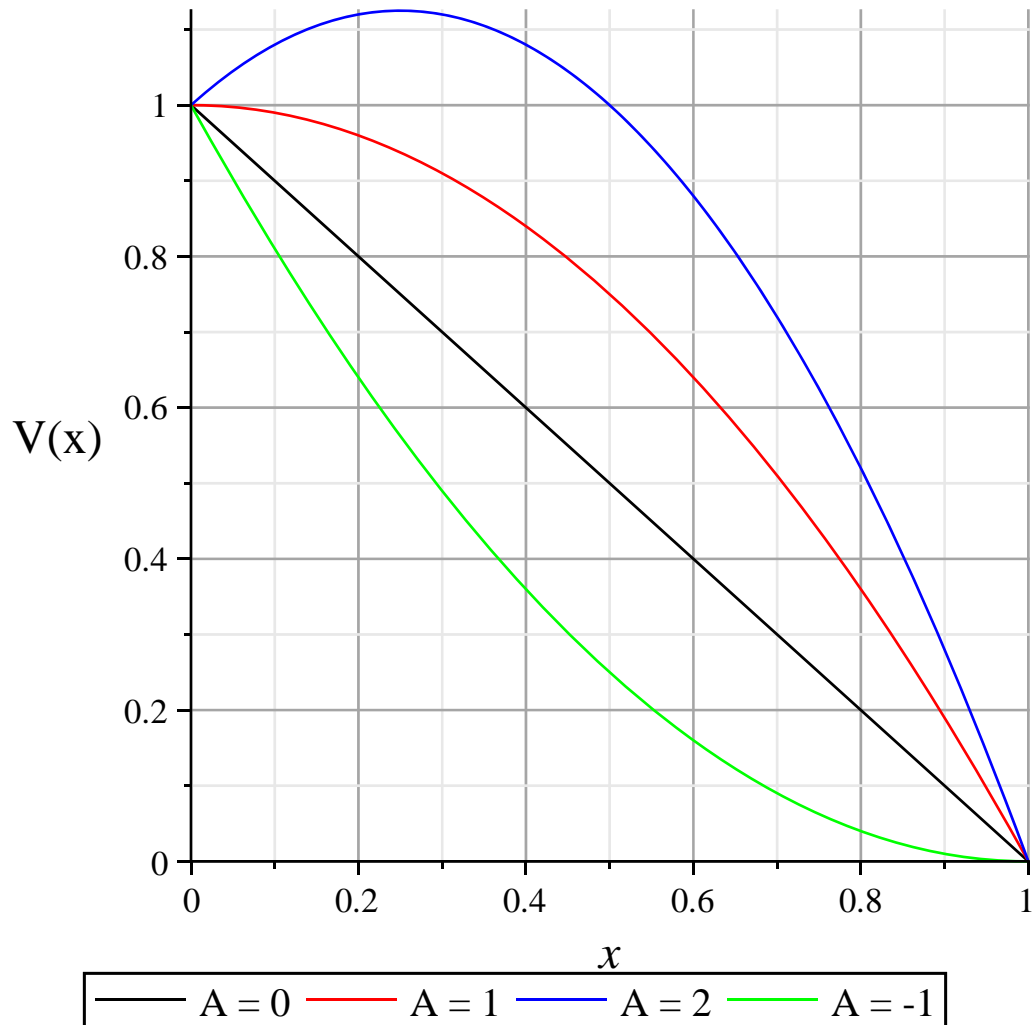
$$V := (A, x) \rightarrow -A x^2 + (A - 1) x + 1$$

$$E(A, x) = 2 A x - A + 1$$

(1)

>

> plot([V(0, x), V(1, x), V(2, x), V(-1, x)], x=0..1, color=[black, red, blue, green]);



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> plot([E(0, x), E(1, x), E(2, x), E(-1, x)], x=0..1, color=[black, red, blue, green]);
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