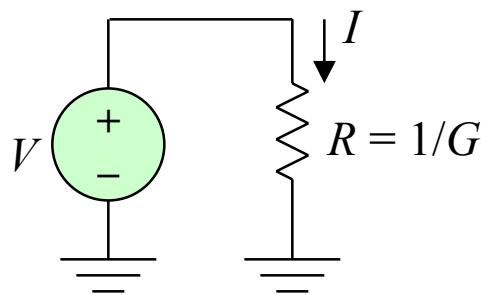
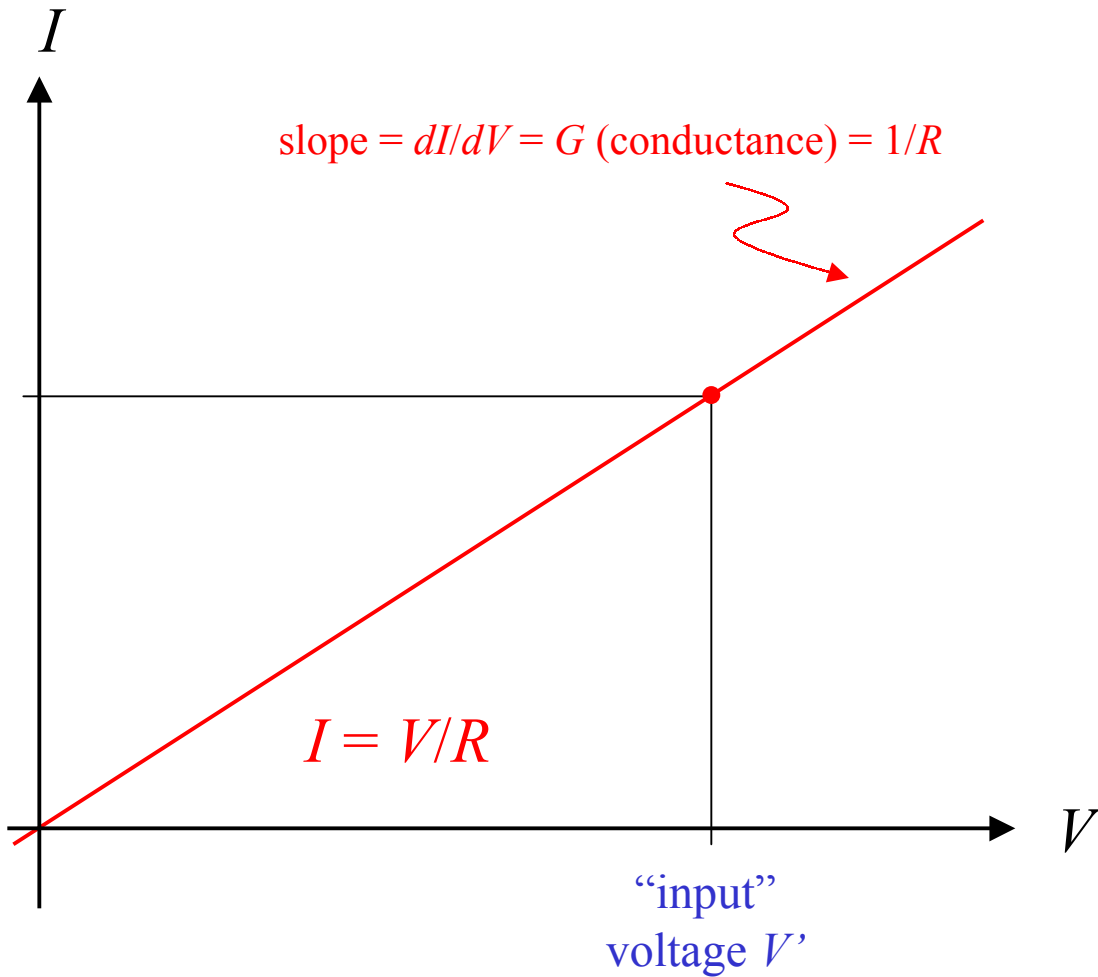


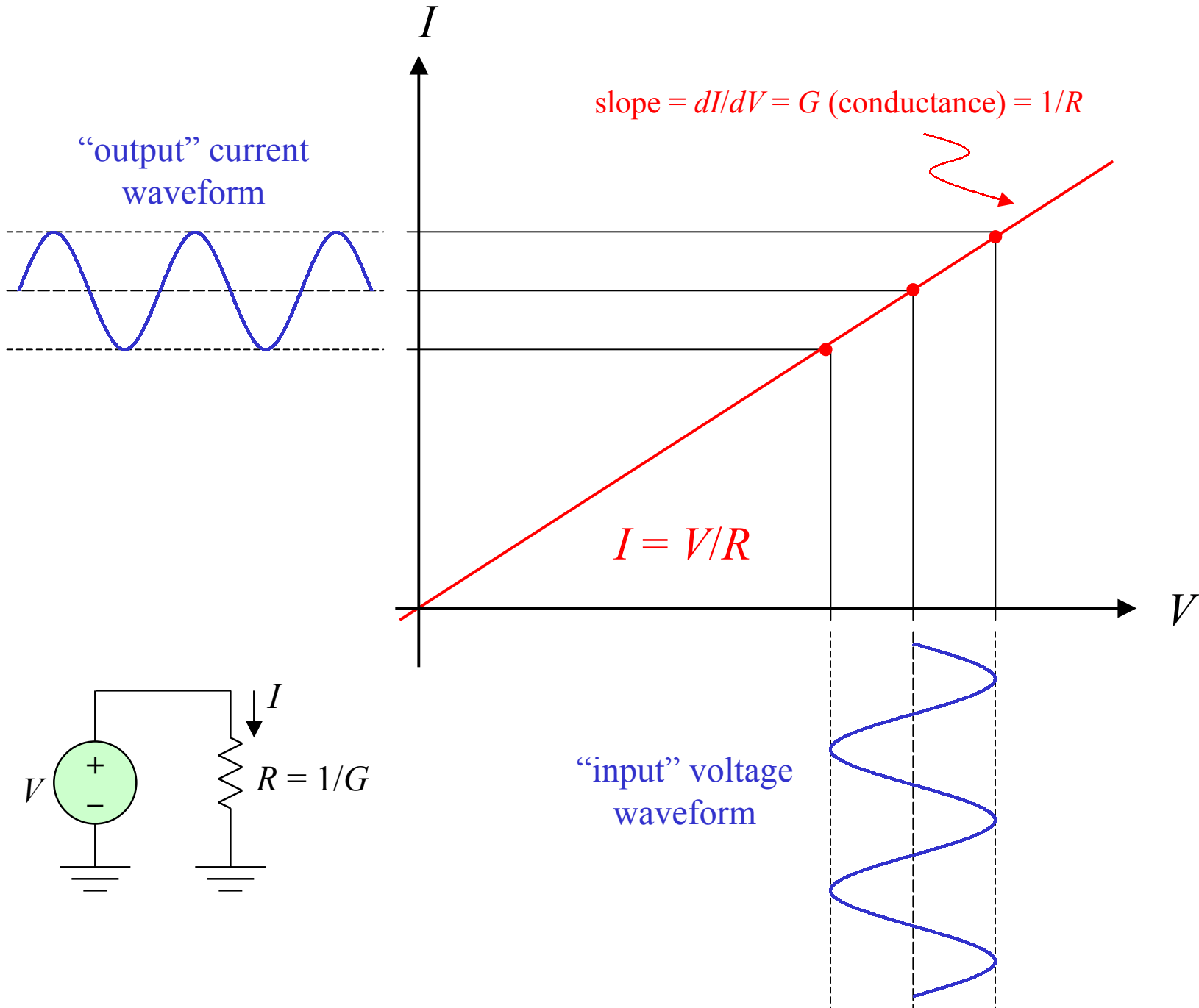
# Small-Signal Concepts

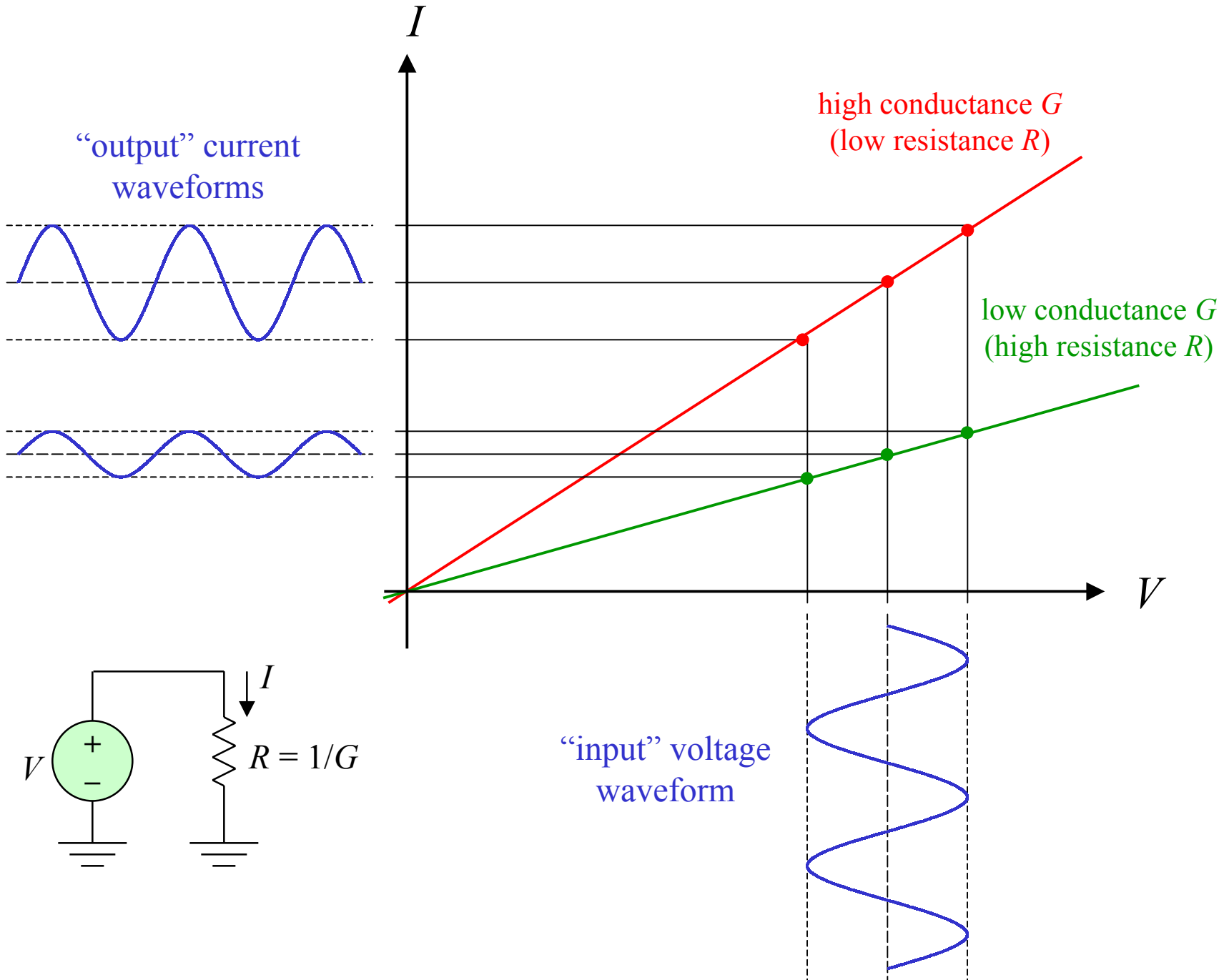
ECE 3110

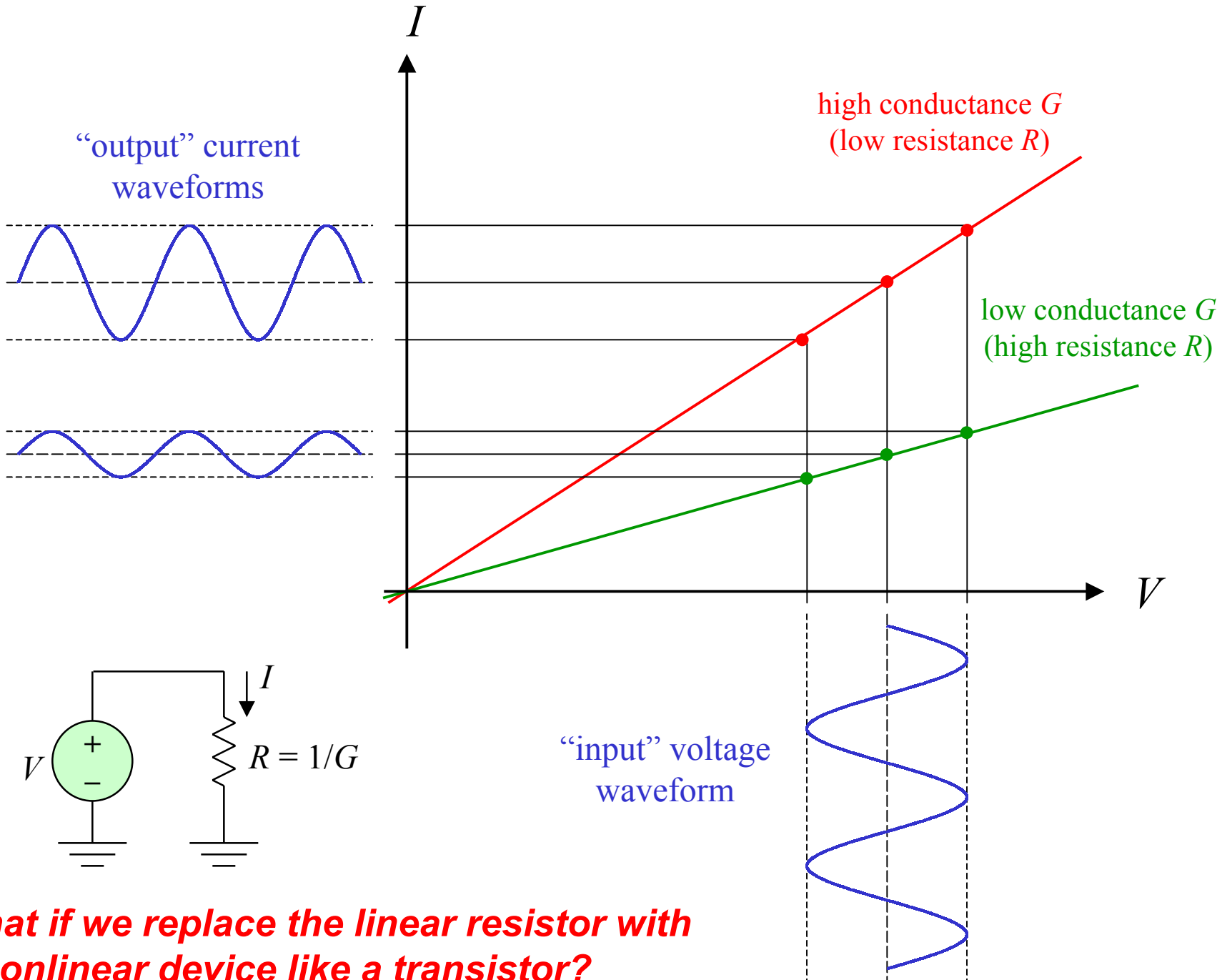


“output” current  $I$

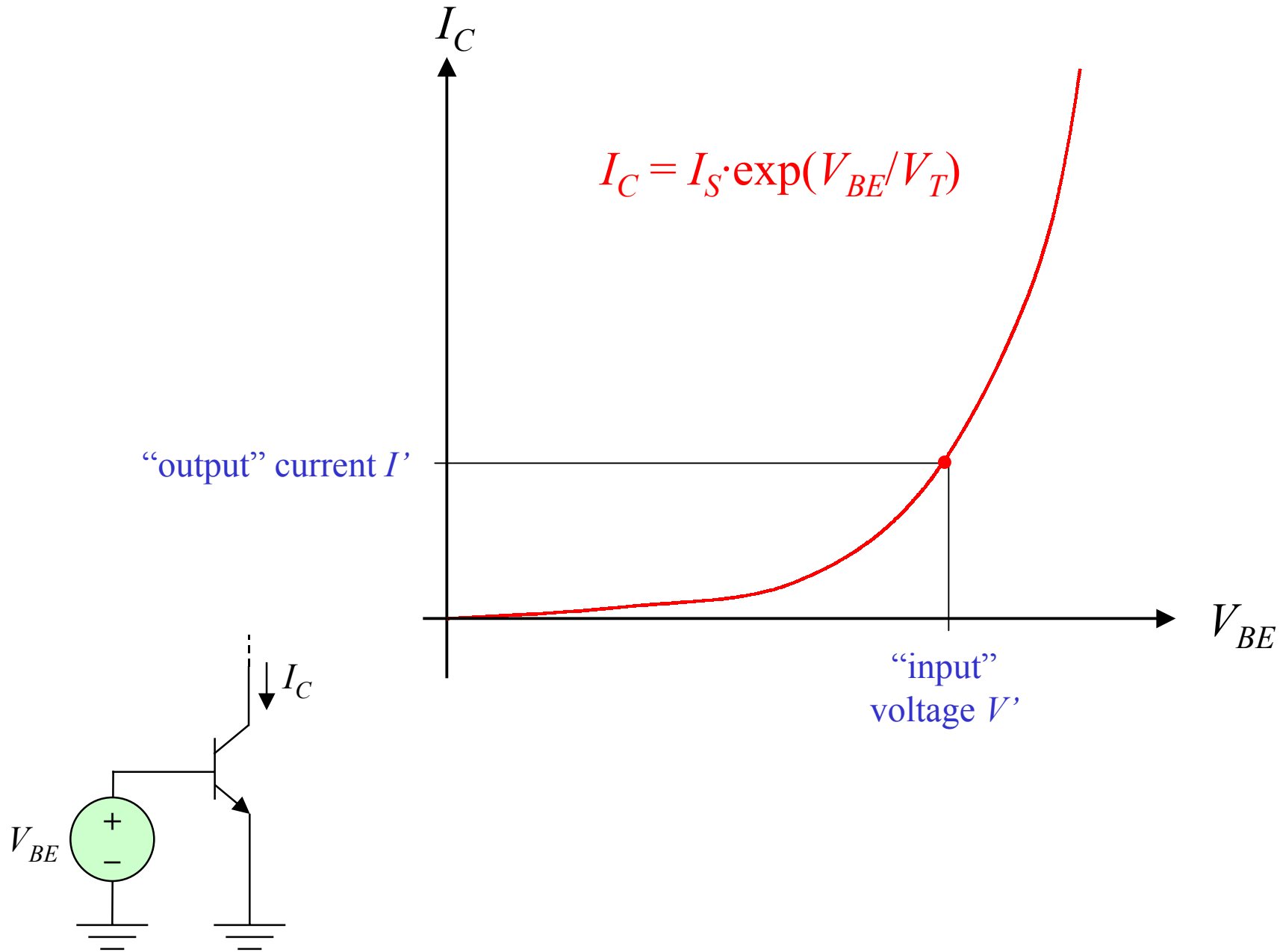


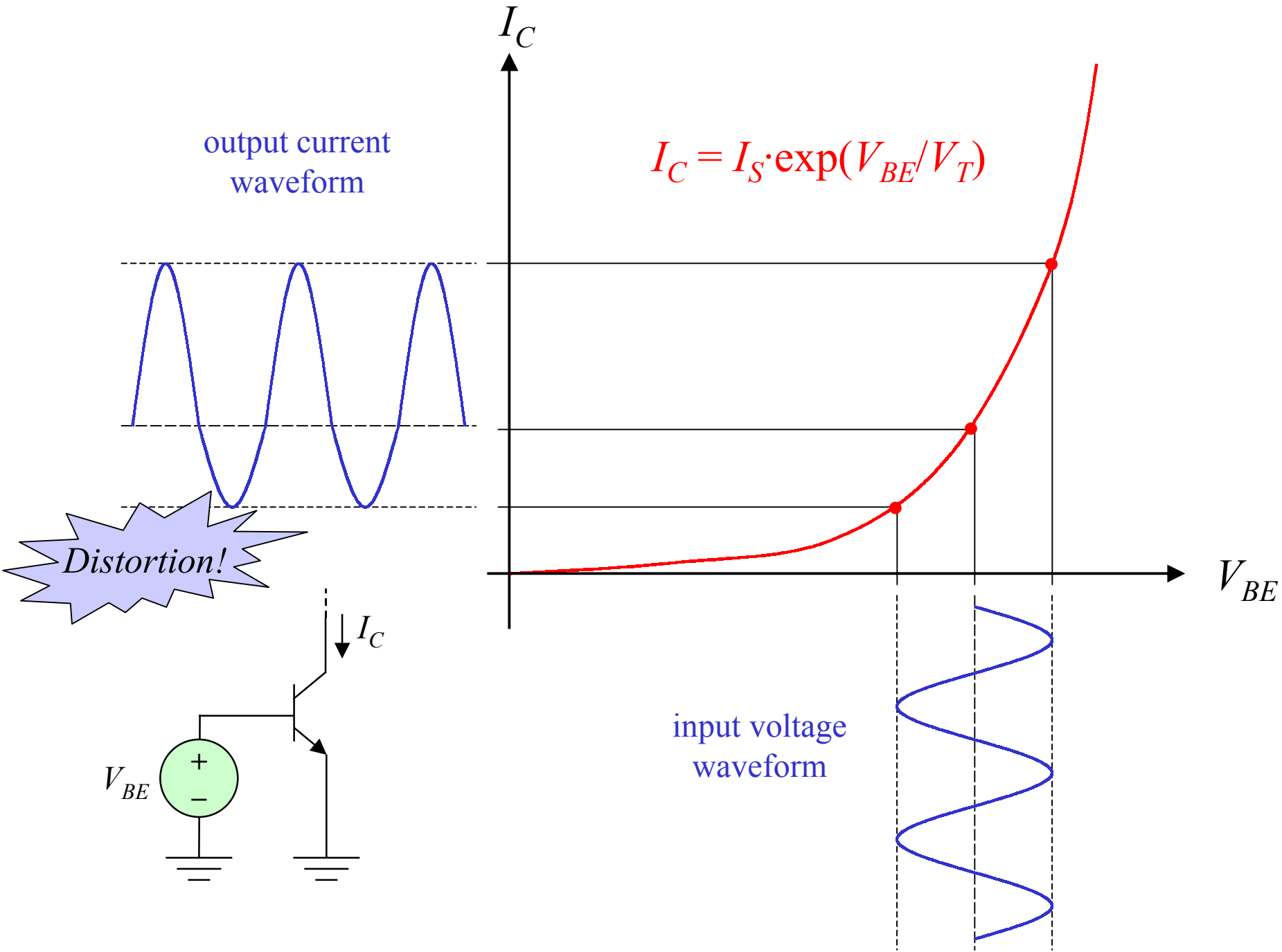






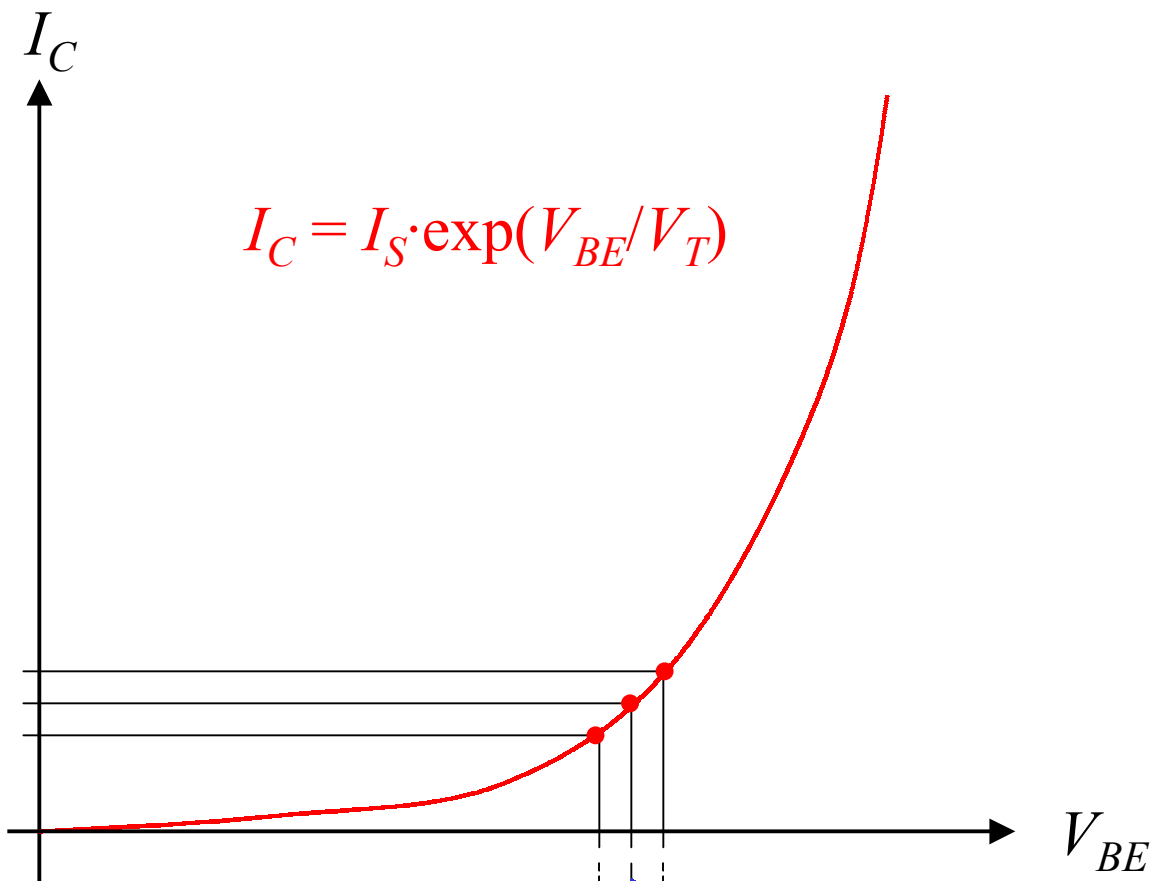
**What if we replace the linear resistor with a nonlinear device like a transistor?**





Distortion can be managed if signal swing is kept sufficiently small

output current waveform



$$I_C = I_S \cdot \exp(V_{BE}/V_T)$$

input voltage waveform

