

# Karp Reduction

If  $\pi$  and  $\pi'$  are two decision problems in NP and there is a Karp reduction from  $\pi$  to  $\pi'$ , we write this as

$$\pi \propto \pi',$$

and say that “ $\pi$  reduces to  $\pi'$ ”.

Note that if  $\pi_1 \propto \pi_2$  and  $\pi_2 \propto \pi_3$ , then  $\pi_1 \propto \pi_3$ . That is, Karp Reductions are transitive.