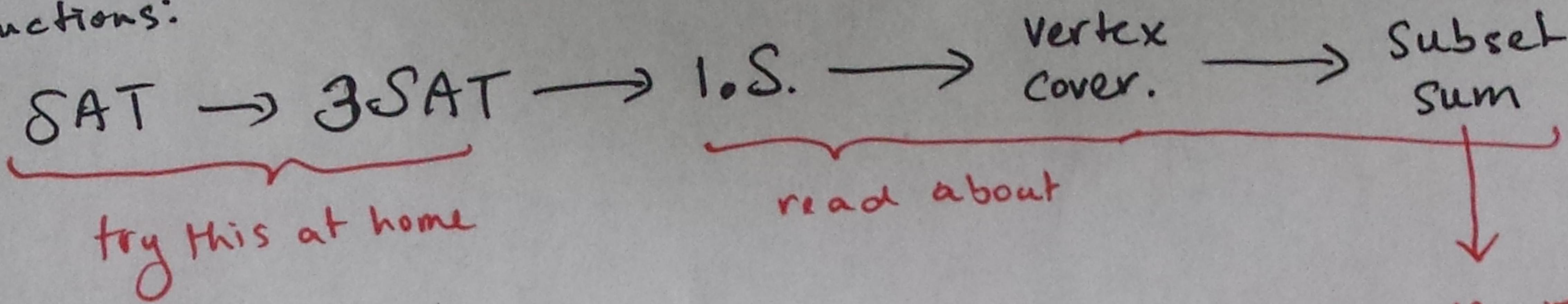


reductions:



weakly  
Subset sum is  $^1\text{NP-hard}$ .

there is poly time alg. for  
subset sum unless  $P=NP$ .

given  $n$  integers +  
a "goal" number  $T$ :  
is there a subset of the  
input integers that add  
to  $T$ .

$$\Theta(nT)$$

DP-algorithm.  
(PA 3)

not poly time. ←  
→ ~~pseudo~~ pseudo · poly time.

Why?

poly time:  $\Theta(n^k)$   $k$  is a fixed number ( $k=3, 10, 100$ )  
 $n$  is the size of the problem.

size (Subset sum instance) =  $n, \log_2 T$

$$\Theta(nT) = \Theta(n^2 \log_2 T)$$



$$\Theta(n^2 \log_2 n) \leftarrow \text{not poly time.}$$