

Problem 1

$\exists \cdot H.$ $P(h) ::=$ every h -node G is $w+1$ colorable.

B.C. $P(1) \checkmark$

$\exists \cdot S.$ assume $h+1$ -node g , remove $h+1$ st,

color with $w+1$, add $h+1$ st, $N(h+1\text{st}) = w$

\rightarrow color with $w+1 \checkmark$

□

Problem 2

1. Proof by \star , assume sub is \nrightarrow Planar

but G Planar $\rightarrow G \nrightarrow$ Planar \star

2.

$\exists \cdot H.$ $P(h) ::= h$ -node G is 6 colorable.

B.C. $P(1) \checkmark$

$\exists \cdot S.$ Remove the ≤ 5 degree from

$(h+1)$ -node G' , color w/ 6,

add back, ≤ 6 colors needed. \checkmark

□