

# Homework }

Saturday, March 17, 2018

11:21 AM

$h(n) \rightarrow$  number of white tiles misplaced;  
defined as any white tile to the  
right of any black tile

This will never overestimate  $\rightarrow$  if a tile is in the  
wrong spot, it requires \*at minimum\* a cost of  
one to be moved. Therefore, the minimum cost of solution  
will be equal to white tiles that need to be moved  
to the left, as every one of those tiles will need  
to move.

Take an edge case, though, and say moving one  
black tile can resolve two white tiles:

WBWWEBB

To move the black tile two spaces, you can  
hop over the white tiles. HOWEVER, this move  
will have a cost of two, which is equal  
to  $h(n)$ .

expands first

WBWBWWEB

B

WBWBWWEB ( $h(n) = 2$ )

WBWWBEB ( $h(n) = 2$ )

continues

1 |

1 |

continues  
to  
expand  
(4=4)

↓  
WBWBEB /  $h(n)=2$

↓  
WWBWBEB /  $h(n)=1$   
cost too high,  
expands other branch

↓  
WWBWBEB /  $h(n)=1$

↓  
WWWBBEB /  $h(n)=0$   
solution found, cost of 4