Q4.

(a)

Up

Right

Left

Down

Down

Right

Right

Down

Left

Down

Answer:

Left, left, down, right

(b)

Right

Up

Down

Up

Right

Right

Down

Down

Right

Left

Down

Left

Answer:

Left, Left, Down, Down

The goal state cannot be reached using this algorithm.

Q5.

(a)

CA = YELLOW, CB = RED, CC = BLUE, CD = YELLOW, CE = BLUE, CF = YELLOW, CG = RED, CH = RED

(b)

Starting state: all red

Valid moves: change the colour of one vertex

For brevity, the graph will show a few relevant nodes

E: Y -> B

B: Y -> R

H: Y -> R

D: Y -> R

G: R -> Y

C: Y -> B

D: Y -> B

G: Y -> R

C: Y -> R

A: Y -> R

Answer:

Change G to Red, change C to Blue, change H to Red, change B to Red, change E to Blue