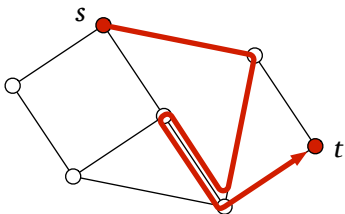
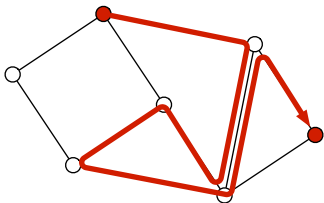


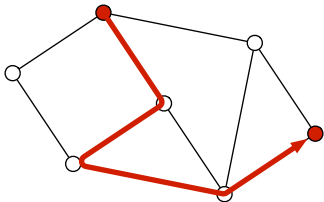
(a)



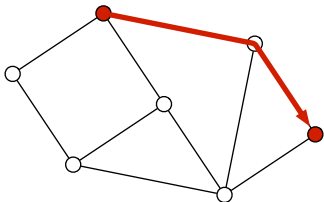
(b)



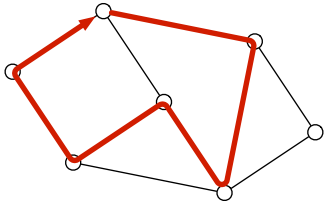
(c)



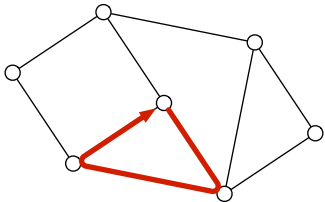
(d)



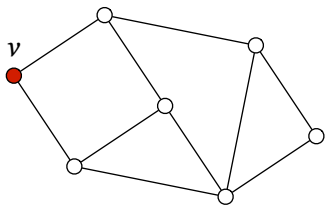
(a)



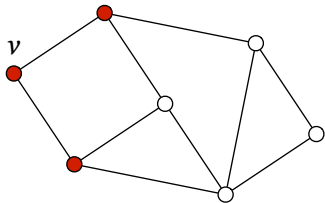
(b)



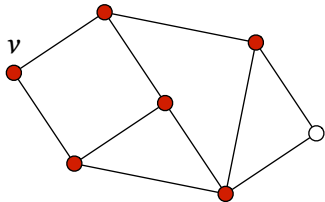
$\text{ball}_G(v, 0):$

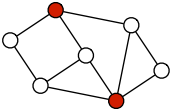


$\text{ball}_G(v, 1):$

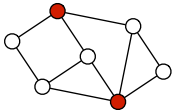


$\text{ball}_G(v, 2):$

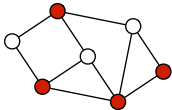




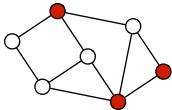
(a)



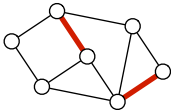
(b)



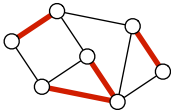
(c)



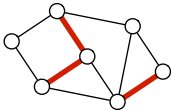
(d)



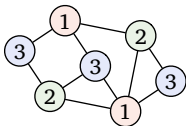
(e)



(f)

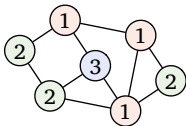


(a)



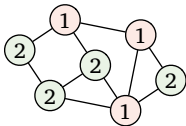
3-colouring

(b)



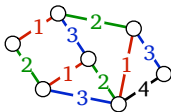
weak 3-colouring

(c)



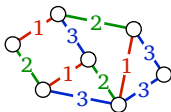
domatic partition
(size 2)

(d)



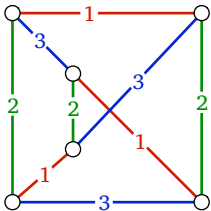
4-edge colouring

(e)

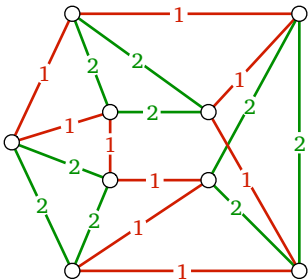


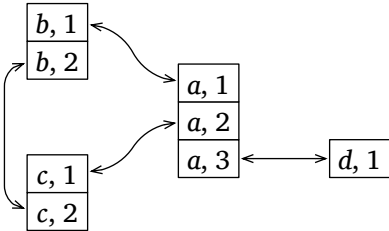
edge domatic partition
(size 3)

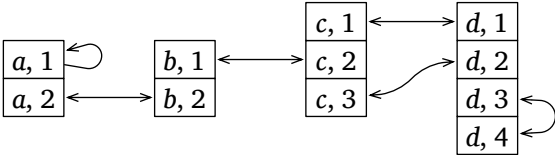
(a)

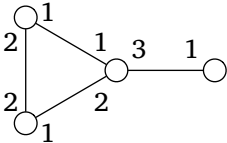


(b)

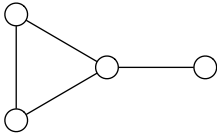




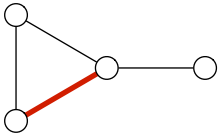




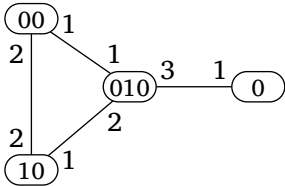
(a)



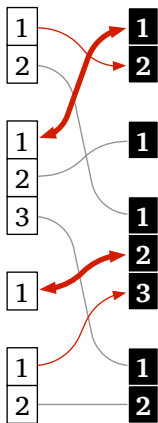
(b)



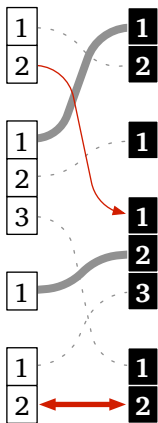
(a)



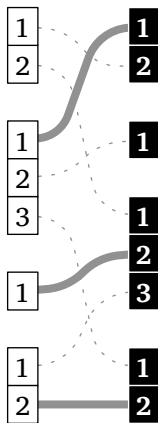
(b)



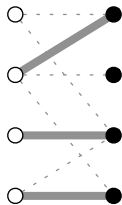
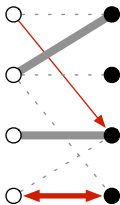
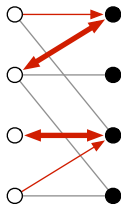
rounds 1–2

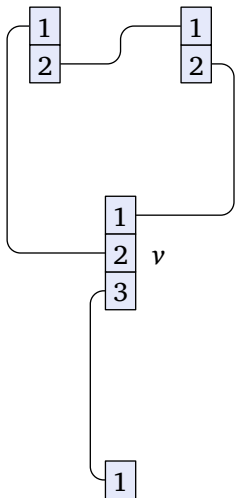
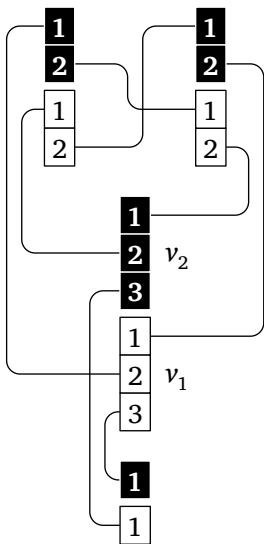
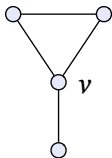
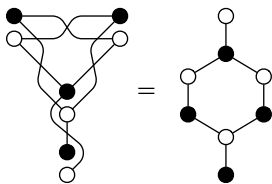


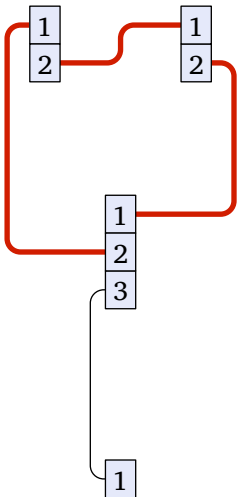
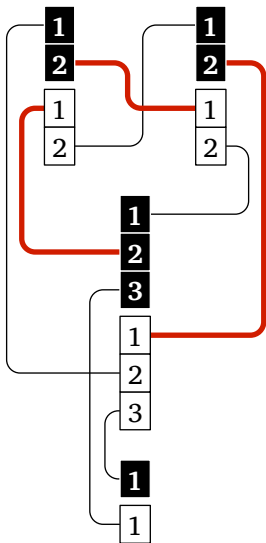
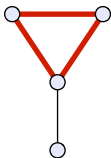
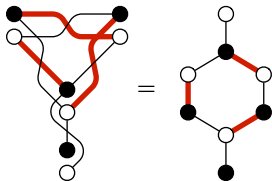
rounds 3–4

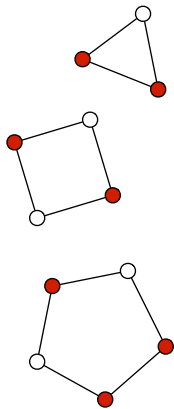


rounds 5–6

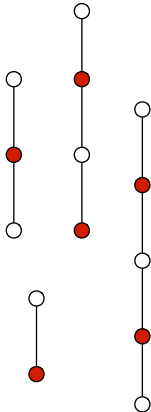


N  N'  G  G' 

N  N'  G  G' 



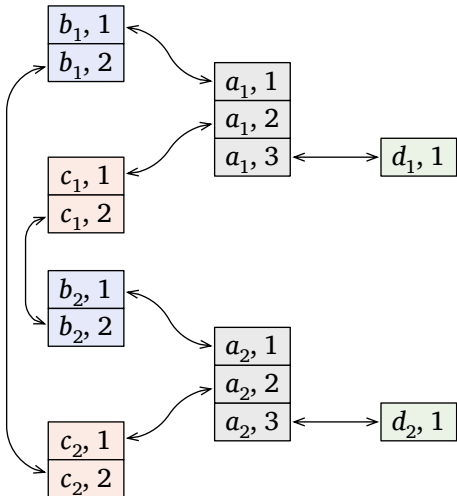
(a)



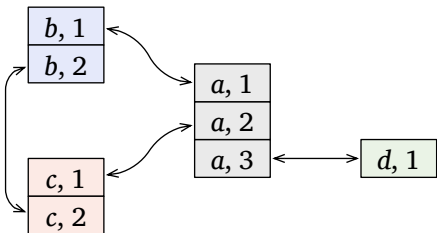
(b)



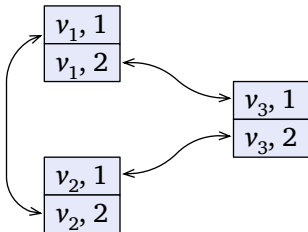
N :



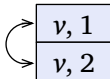
N' :



N :



N' :



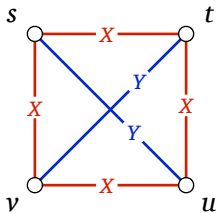
$N:$



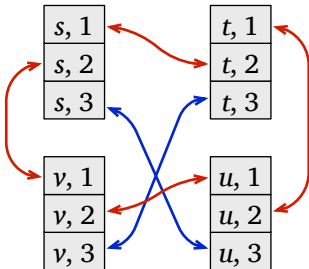
$N':$



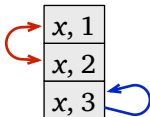
G :

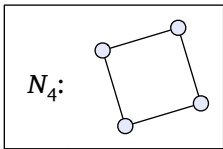
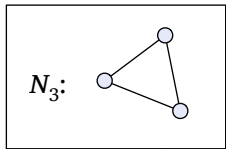


N :



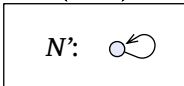
N' :



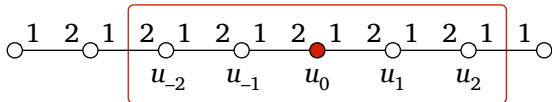
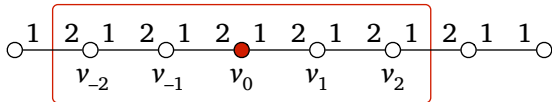
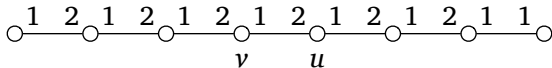


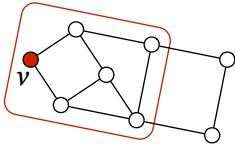
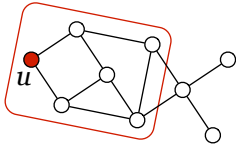
ϕ_3

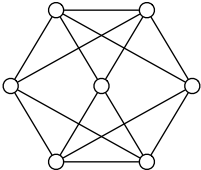
ϕ_4



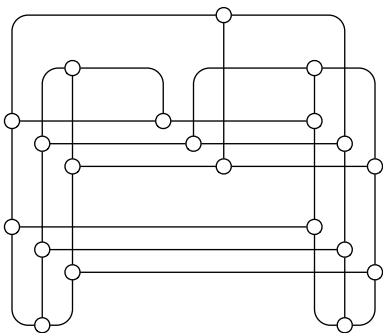




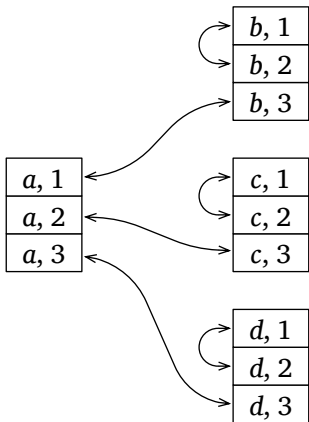


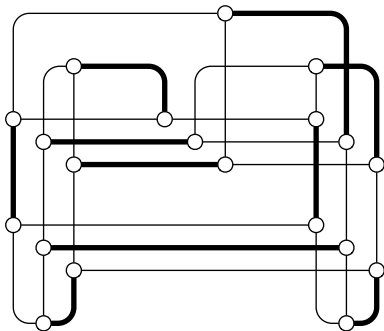
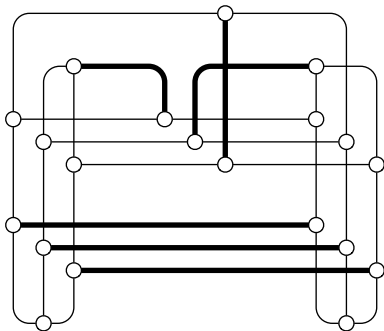


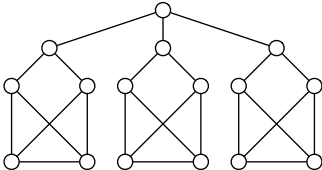
G :

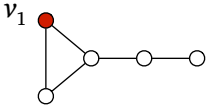


N' :

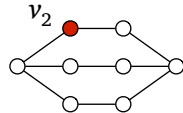




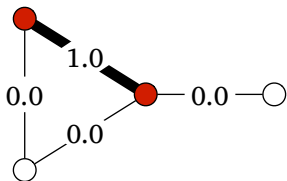
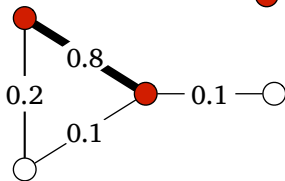
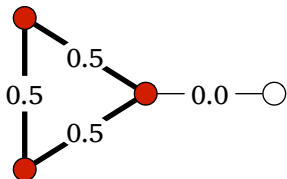
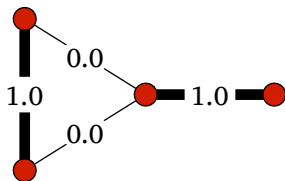


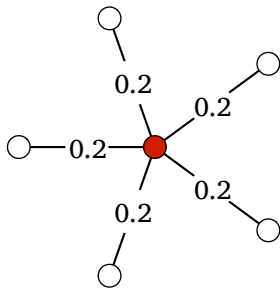
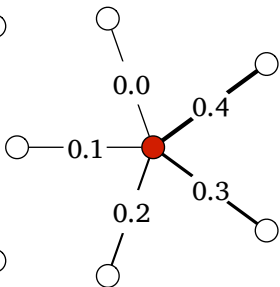
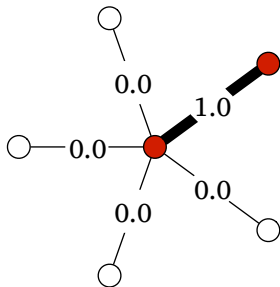


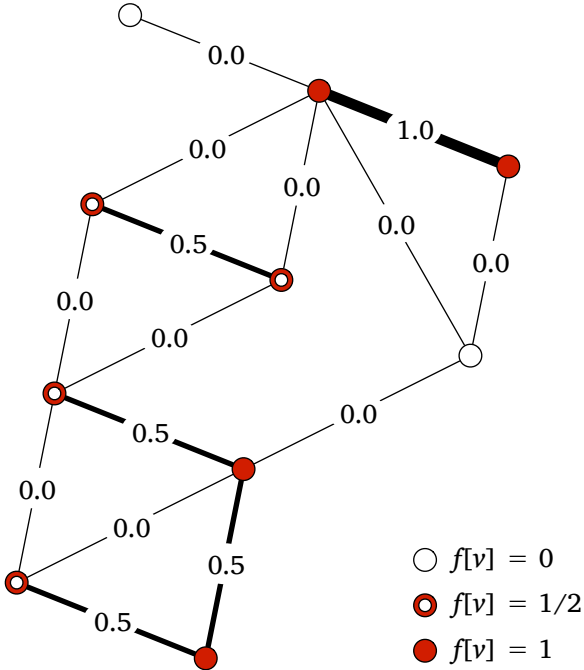
G_1

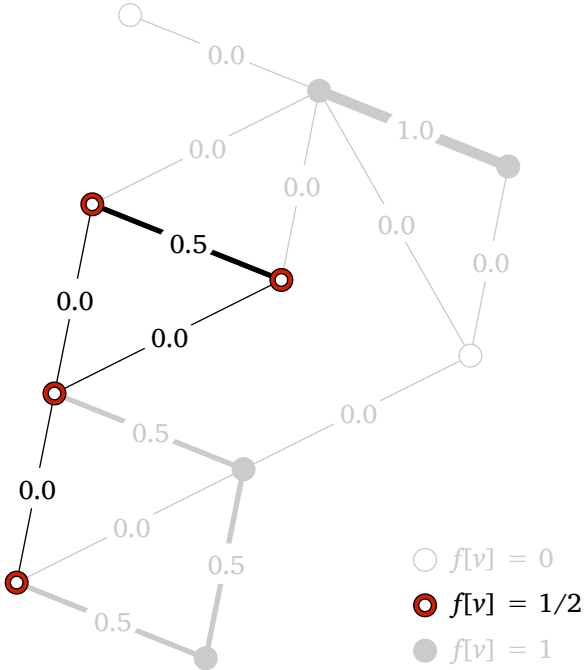


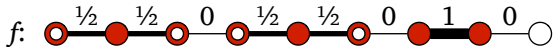
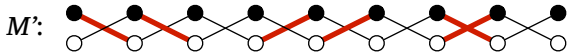
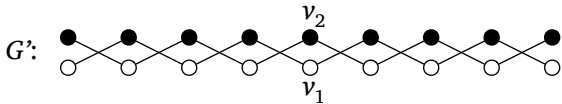
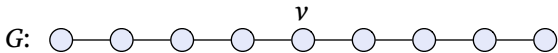
G_2

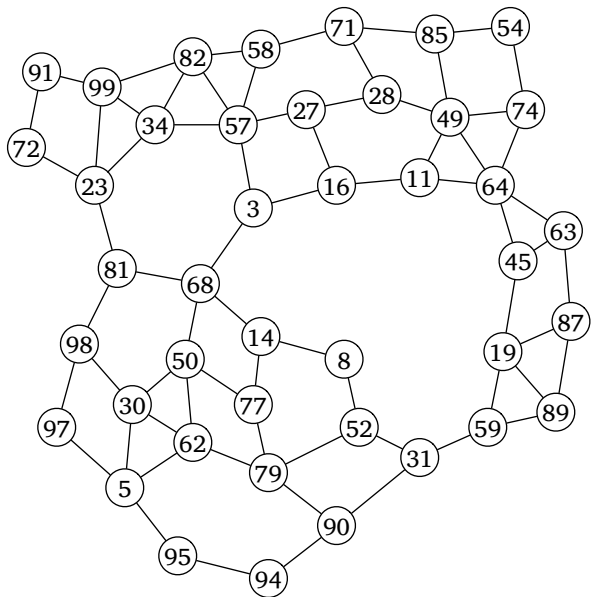


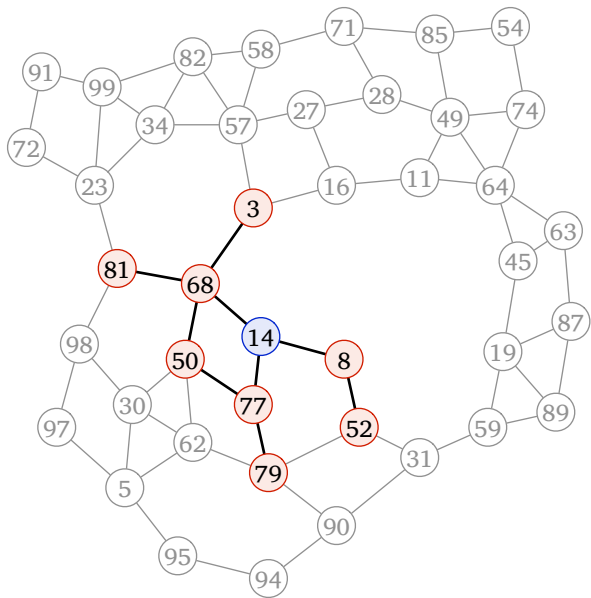


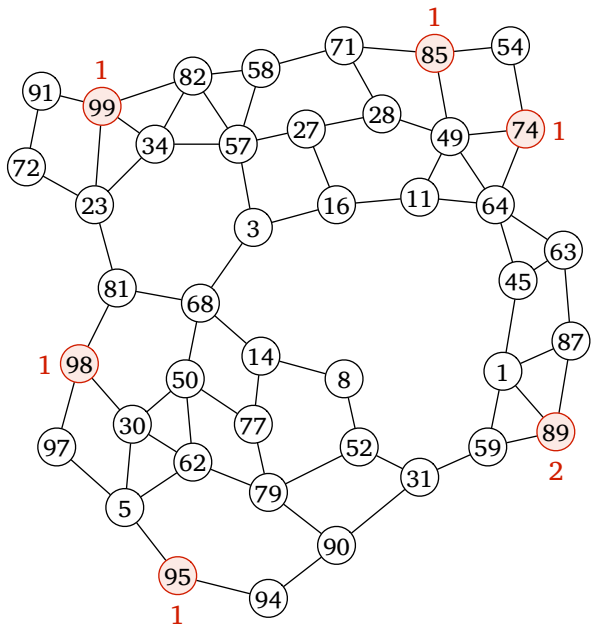


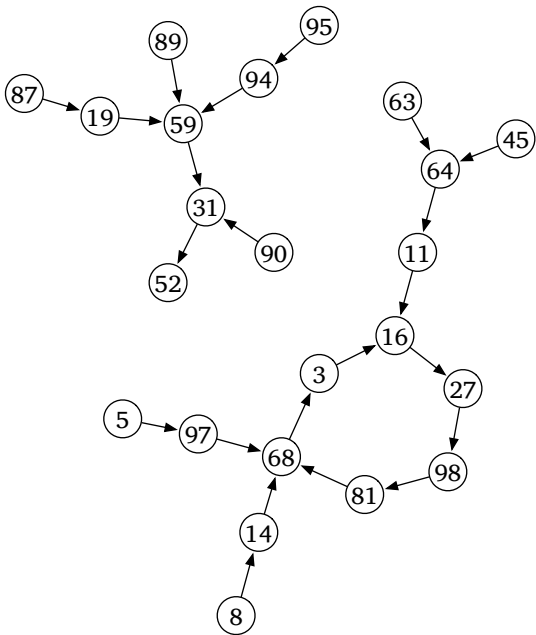


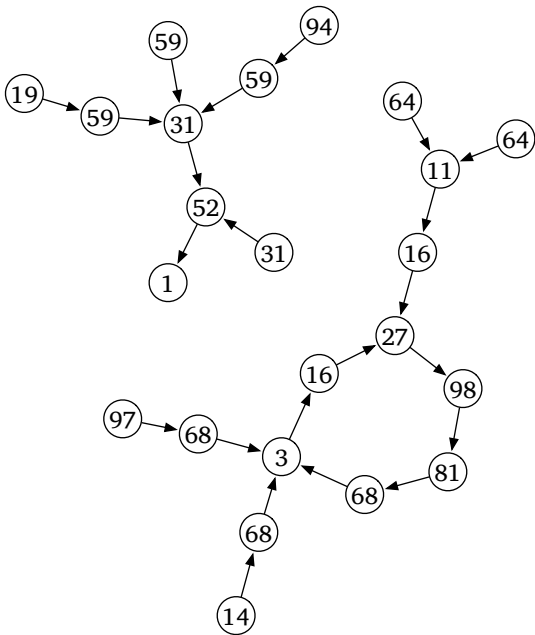


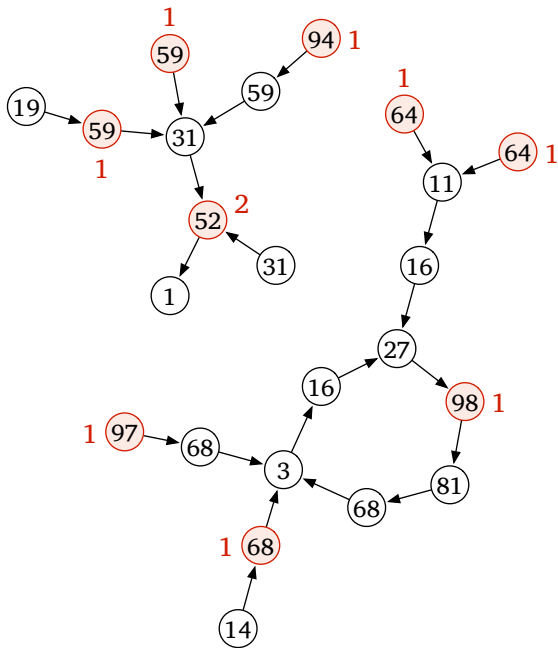




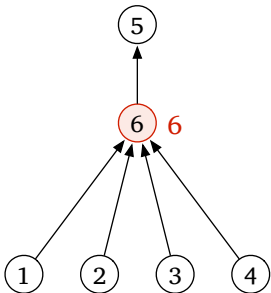




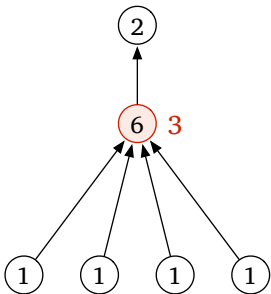


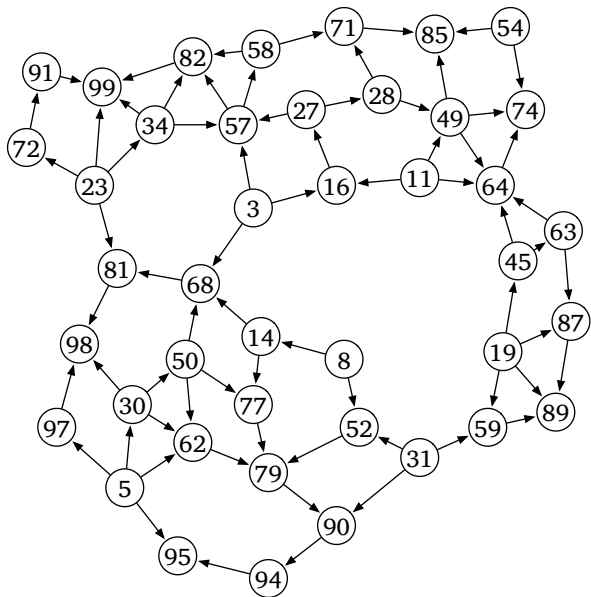


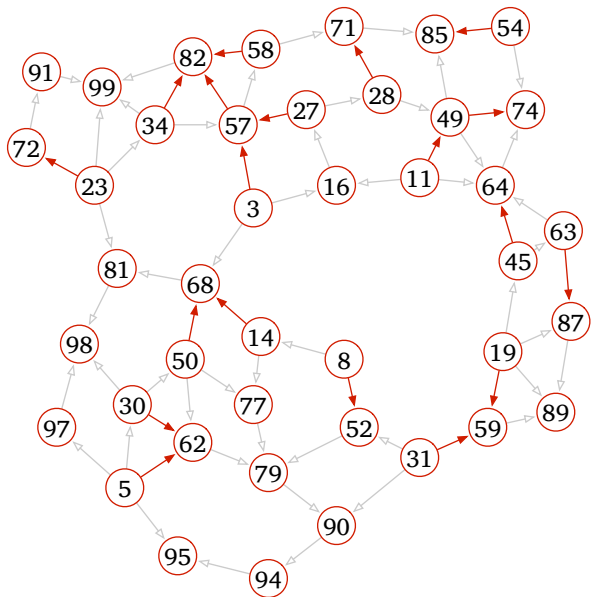
(a)

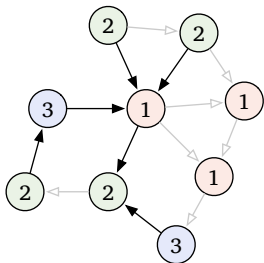
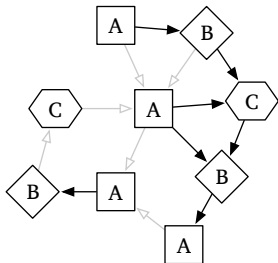
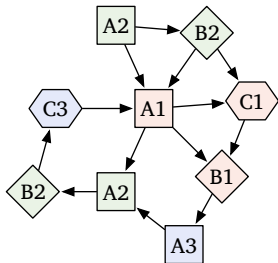


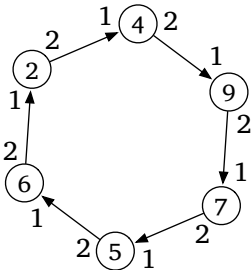
(b)







G_j 3-colouring g_j G'_{j-1}  $(\Delta + 1)$ -colouring g'_{j-1} G'_j  $3(\Delta + 1)$ -colouring h_j

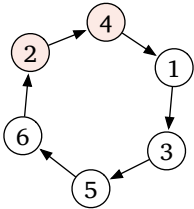


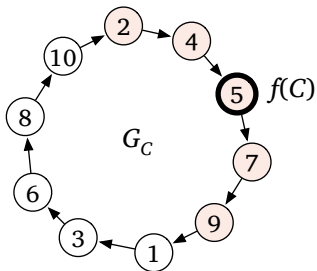
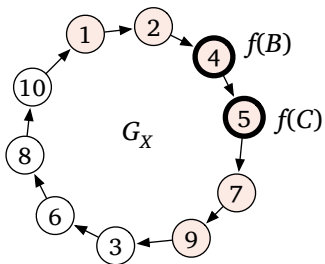
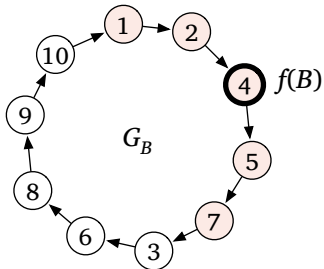
$f:$	$\{1,2,3\} \mapsto 1$	$\{1,2,4\} \mapsto 1$	$\{1,2,5\} \mapsto 1$
	$\{1,2,6\} \mapsto 2$	$\{1,2,7\} \mapsto 1$	$\{1,3,4\} \mapsto 1$
	$\{1,3,5\} \mapsto 1$	$\{1,3,6\} \mapsto 1$	$\{1,3,7\} \mapsto 1$
	$\{1,4,5\} \mapsto 1$	$\{1,4,6\} \mapsto 2$	$\{1,4,7\} \mapsto 1$
	$\{1,5,6\} \mapsto 1$	$\{1,5,7\} \mapsto 1$	$\{1,6,7\} \mapsto 2$
	$\{2,3,4\} \mapsto 2$	$\{2,3,5\} \mapsto 1$	$\{2,3,6\} \mapsto 1$
	$\{2,3,7\} \mapsto 1$	$\{2,4,5\} \mapsto 2$	$\{2,4,6\} \mapsto 1$
	$\{2,4,7\} \mapsto 2$...	$\{4,5,6\} \mapsto 2$
	$\{4,5,7\} \mapsto 1$...	$\{5,6,7\} \mapsto 1$
$f_2:$	$\{2,3\} \mapsto 1$	$\{2,4\} \mapsto 1$	$\{2,5\} \mapsto 1$
	$\{2,6\} \mapsto 2$	$\{2,7\} \mapsto 1$	$\{3,4\} \mapsto 1$
	$\{3,5\} \mapsto 1$	$\{3,6\} \mapsto 1$	$\{3,7\} \mapsto 1$
	$\{4,5\} \mapsto 1$	$\{4,6\} \mapsto 2$	$\{4,7\} \mapsto 1$
	$\{5,6\} \mapsto 1$	$\{5,7\} \mapsto 1$	$\{6,7\} \mapsto 2$

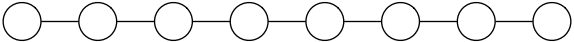
$X_2 = \{2,3,4,5,7\}$, monochromatic in f_2

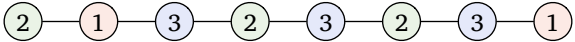
$W_2 = \{2,4,5,7\}$, almost monochromatic in f

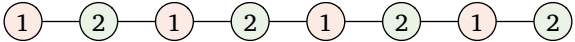
$W = \{1,2,4,5,7\}$, almost monochromatic in f

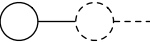


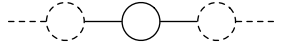


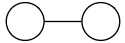


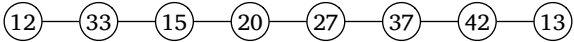


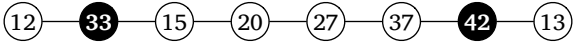


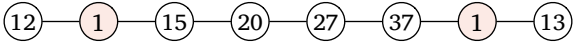


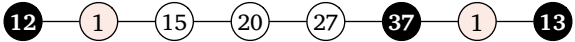


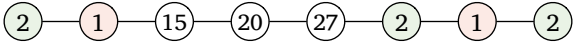


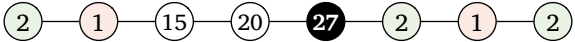


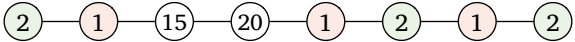


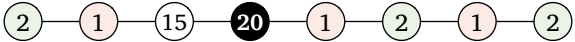


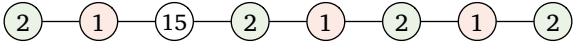


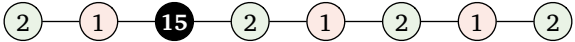


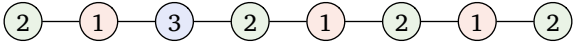


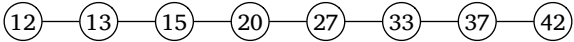


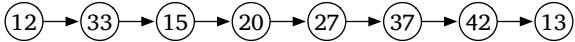


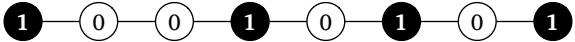


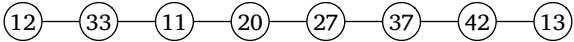


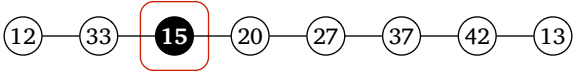


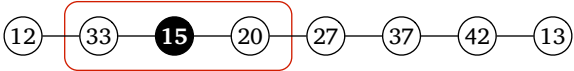


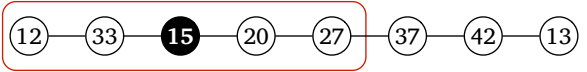


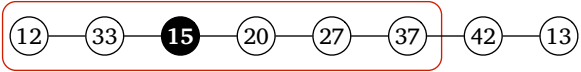




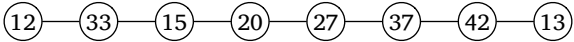




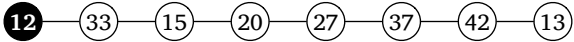




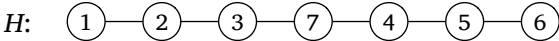
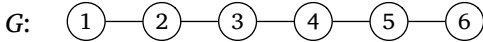




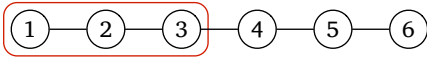
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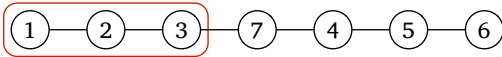
12	12	12	12	12	12	12	12
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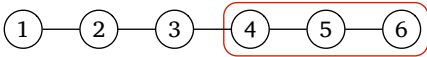
G:



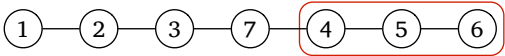
H:



G :

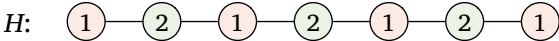
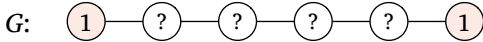


H :

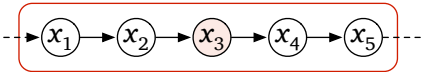


H:



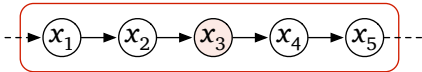


$$f(x_1, x_2, x_3, x_4, x_5)$$

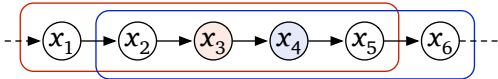


$$f(x_1, x_2, x_3, x_4, x_5)$$

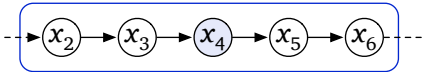
$P_1:$



$P:$



$P_2:$



$$f(x_2, x_3, x_4, x_5, x_6)$$