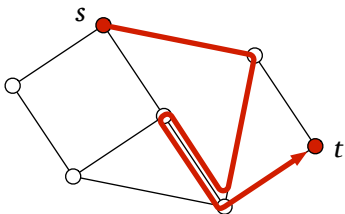
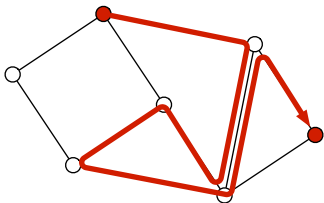


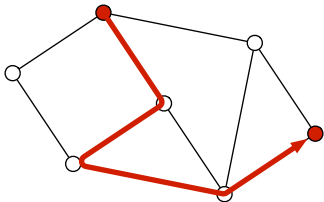
(a)



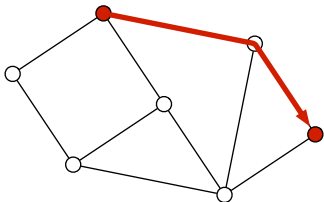
(b)



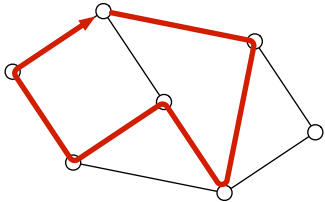
(c)



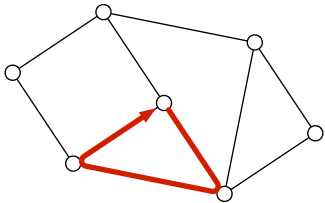
(d)



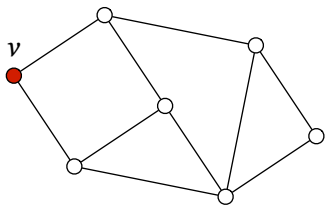
(a)



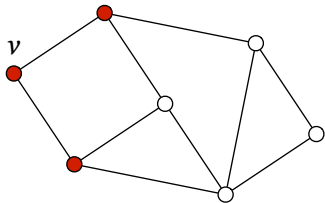
(b)



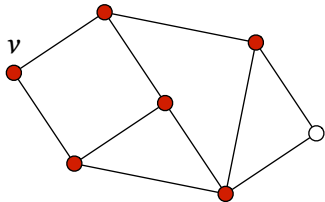
$\text{ball}_G(v, 0):$

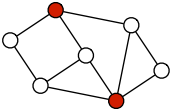


$\text{ball}_G(v, 1):$

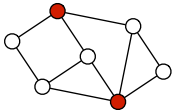


$\text{ball}_G(v, 2):$

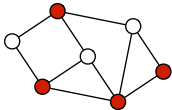




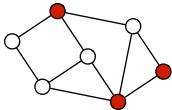
(a)



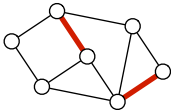
(b)



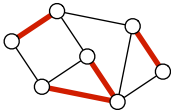
(c)



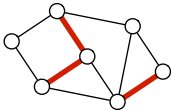
(d)



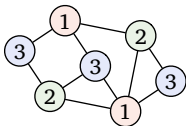
(e)



(f)

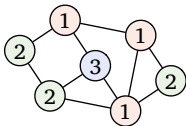


(a)



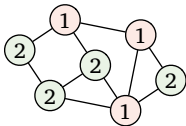
3-colouring

(b)



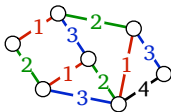
weak 3-colouring

(c)



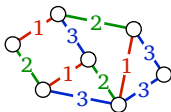
domatic partition  
(size 2)

(d)



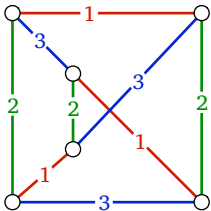
4-edge colouring

(e)

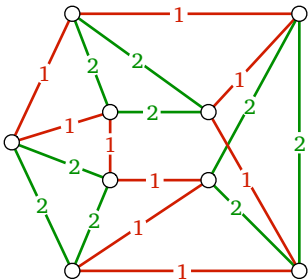


edge domatic partition  
(size 3)

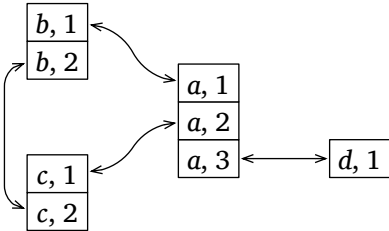
(a)

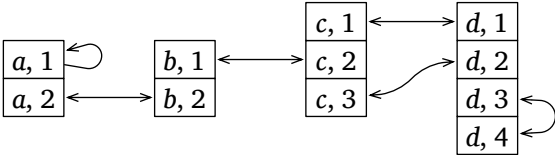


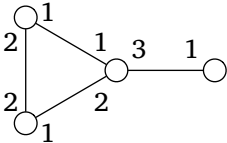
(b)



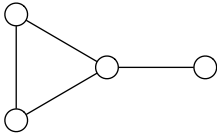




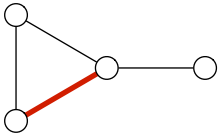




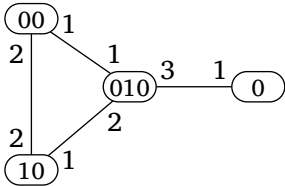
(a)



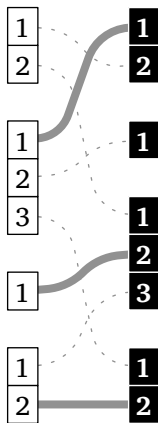
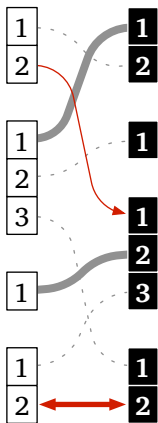
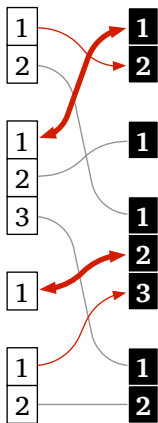
(b)



(a)



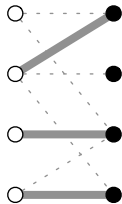
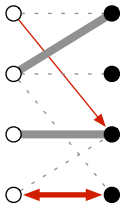
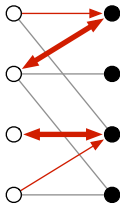
(b)

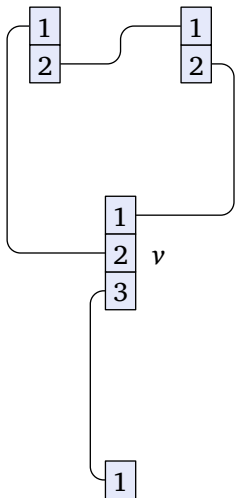
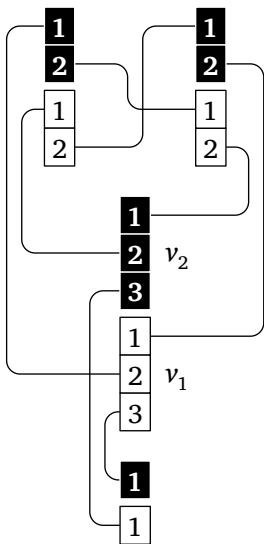
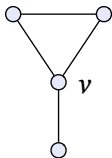
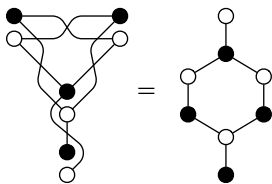


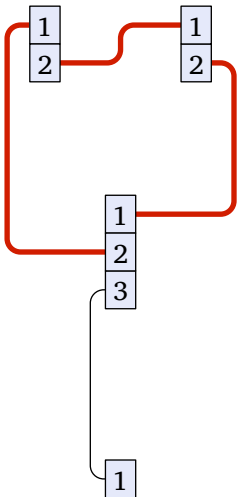
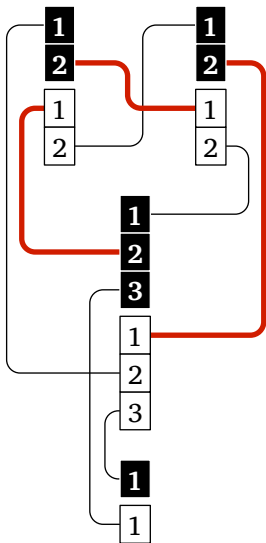
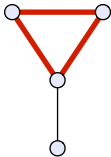
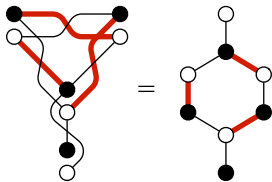
rounds 1–2

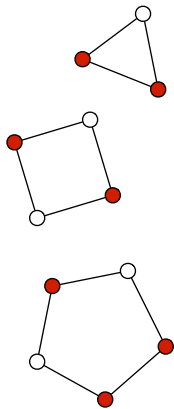
rounds 3–4

rounds 5–6

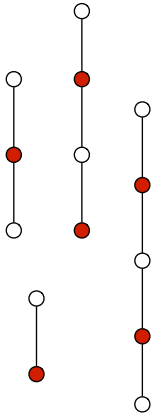


$N$  $N'$  $G$  $G'$ 

$N$  $N'$  $G$  $G'$ 



(a)

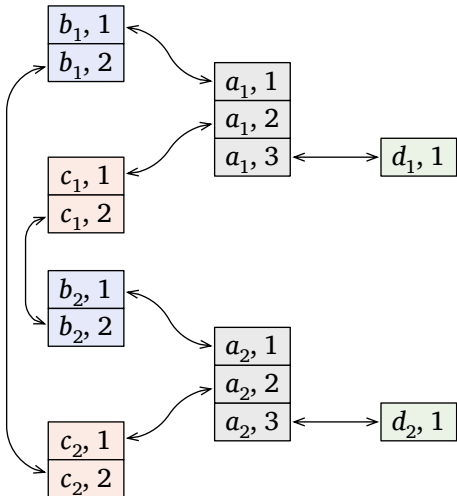


(b)

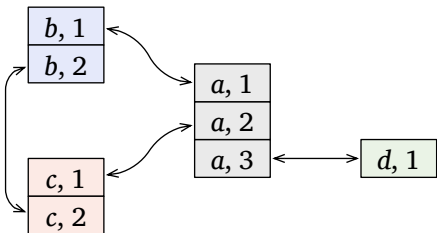




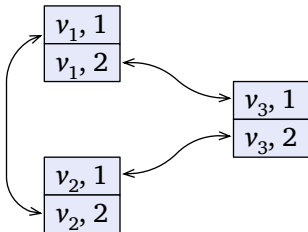
$N$ :



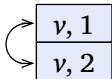
$N'$ :



$N$ :



$N'$ :



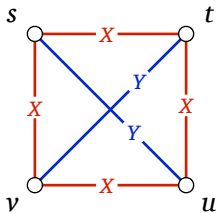
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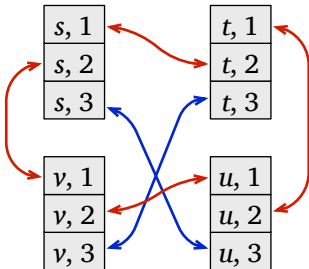
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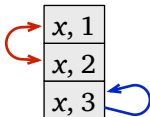
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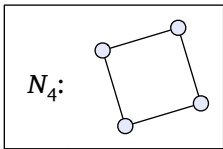
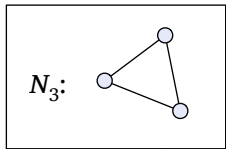


$N$ :



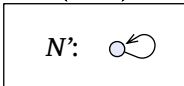
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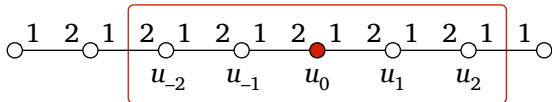
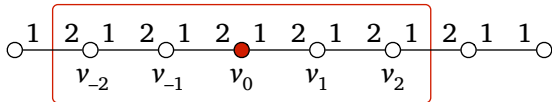
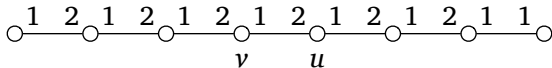


$\phi_3$

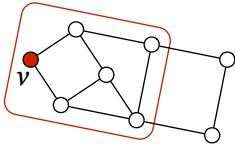
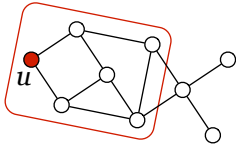
$\phi_4$

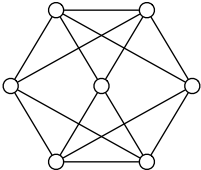




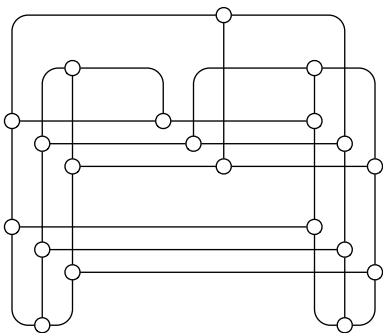




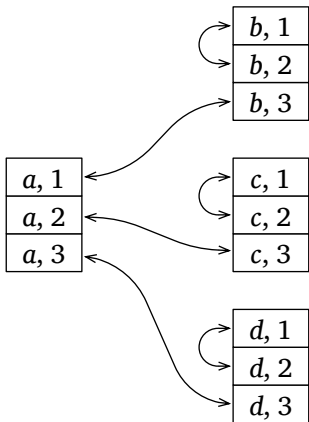


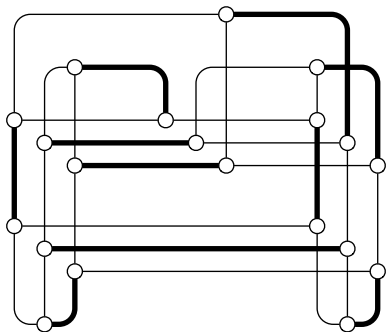
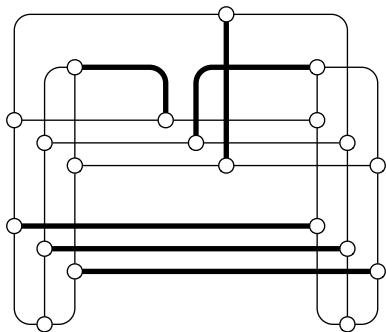


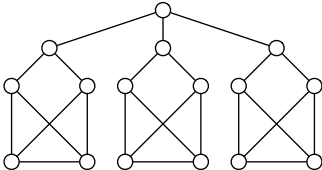
$G$ :

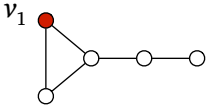


$N'$ :

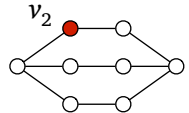




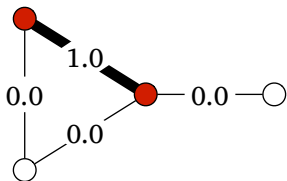
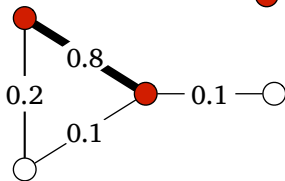
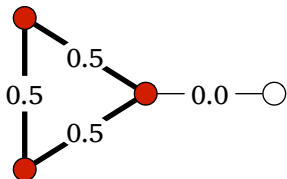
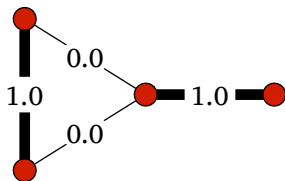


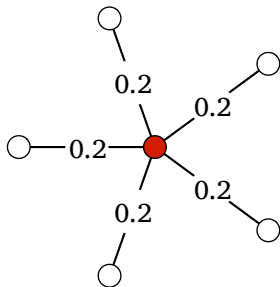
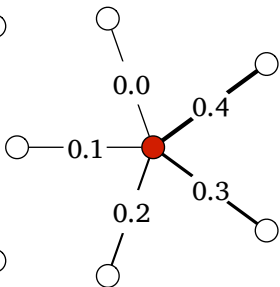
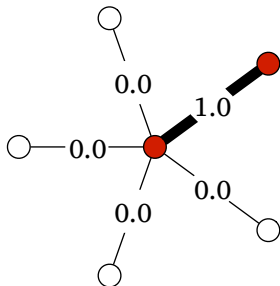


$G_1$

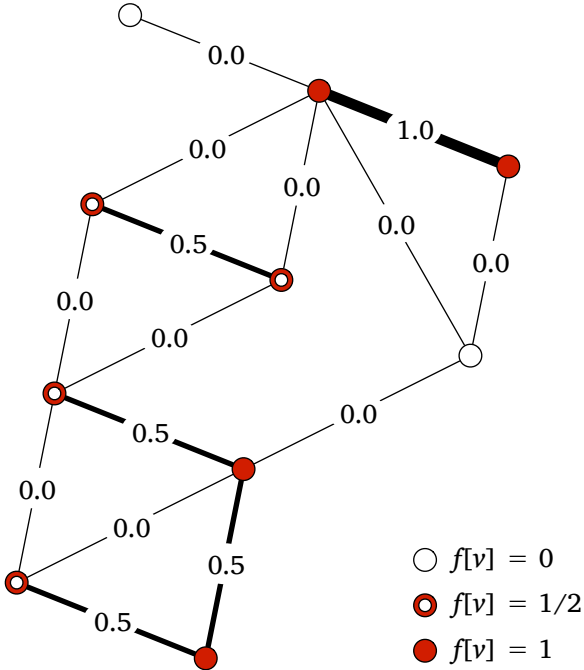


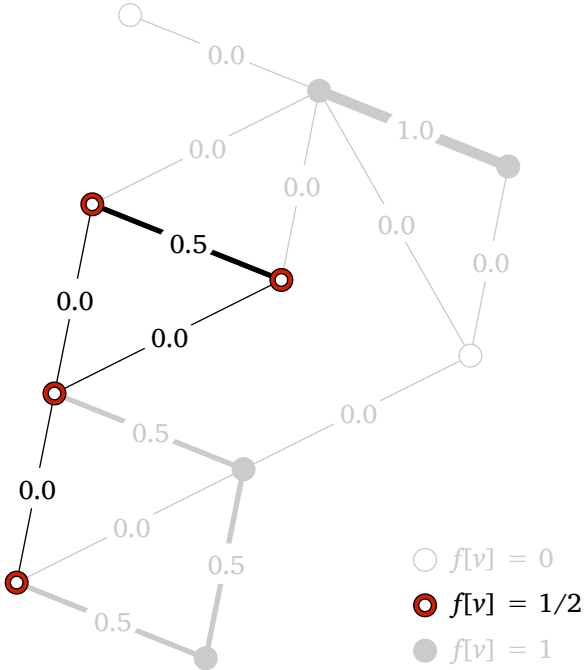
$G_2$

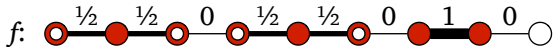
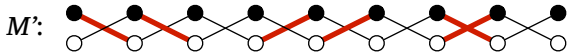
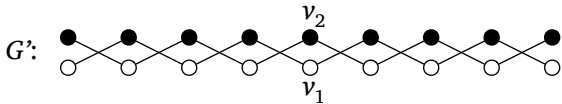
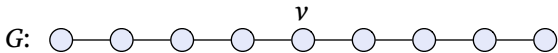


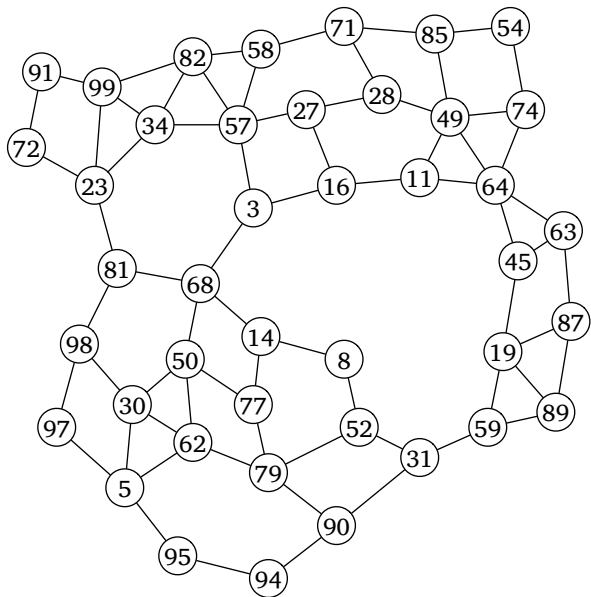


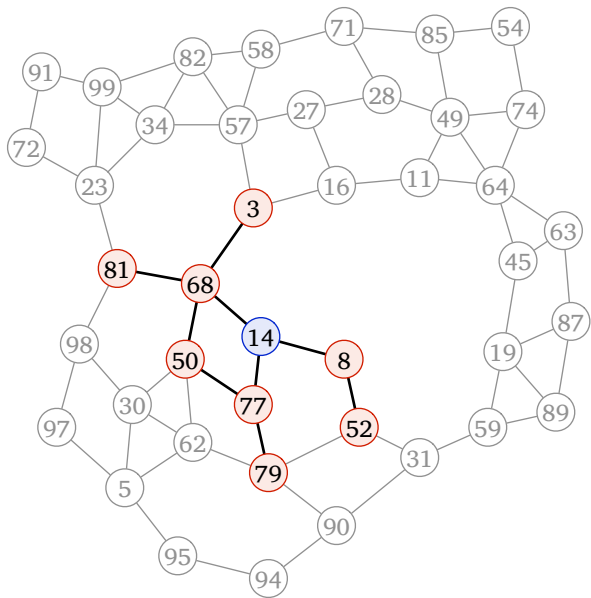


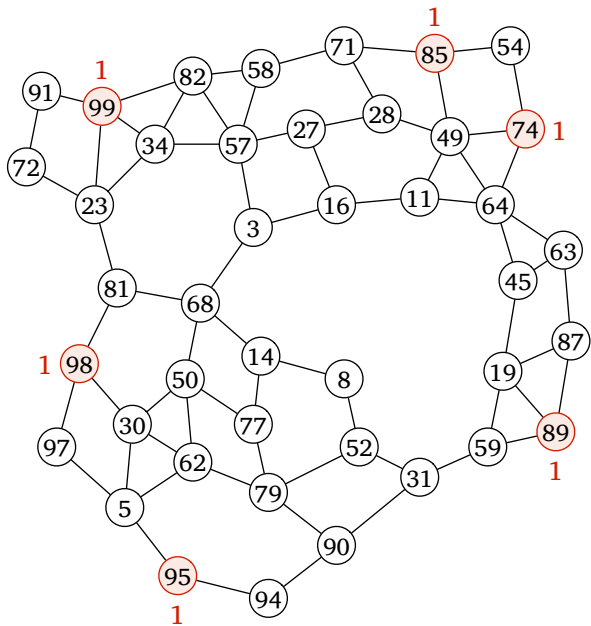


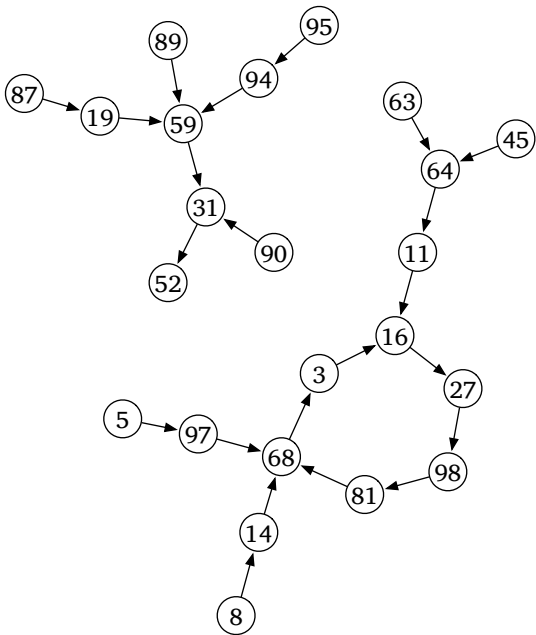


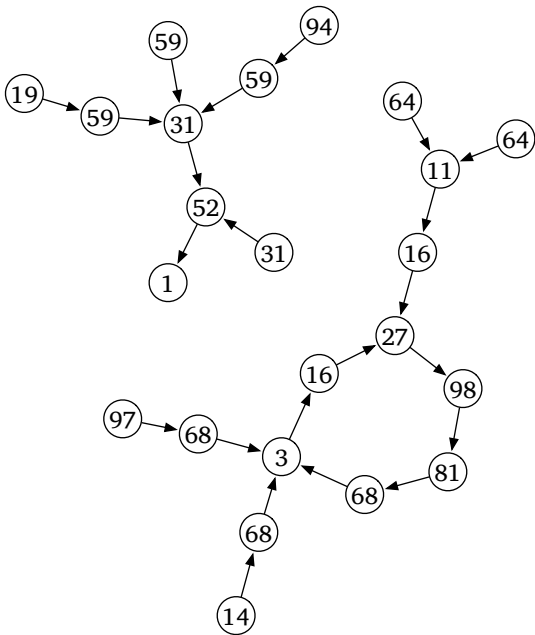




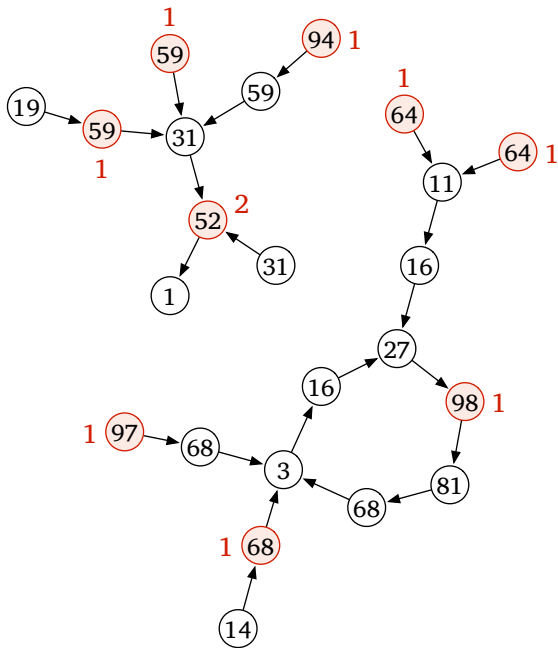




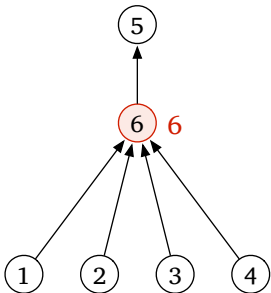




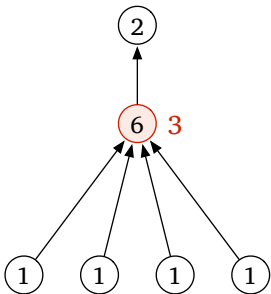


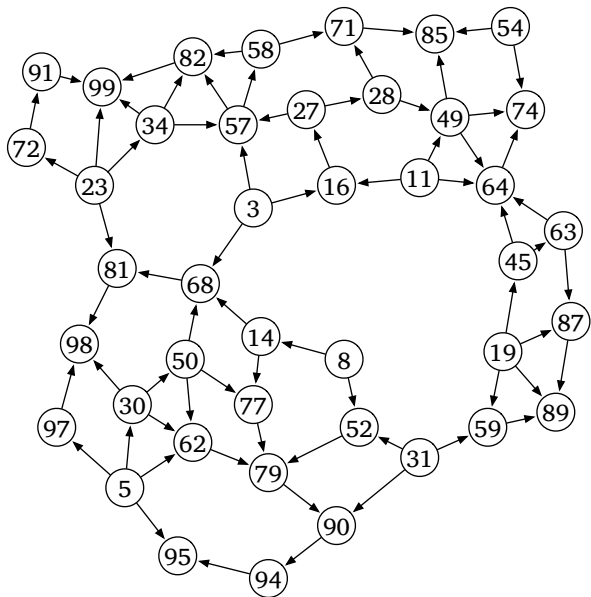


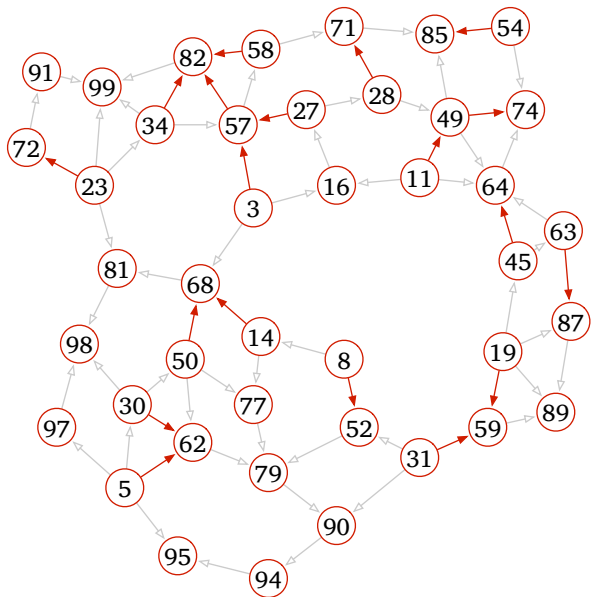
(a)

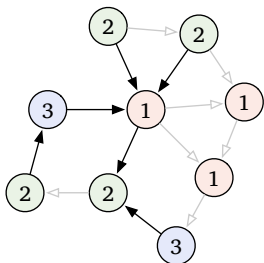
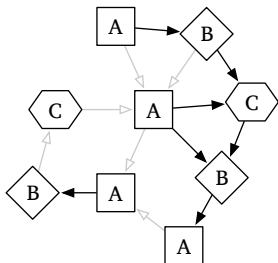
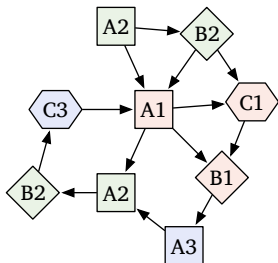


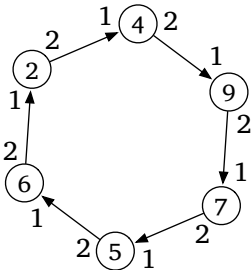
(b)







$G_j$ 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  $f$

