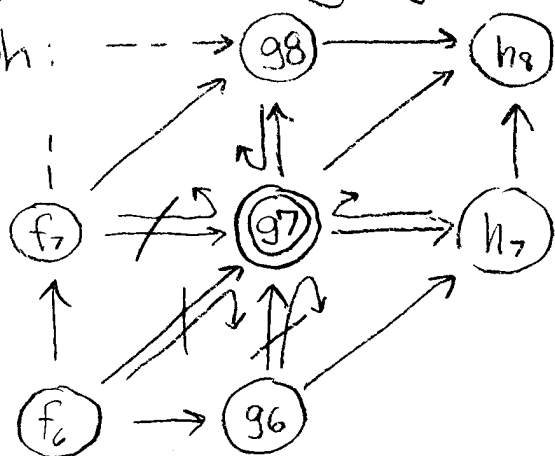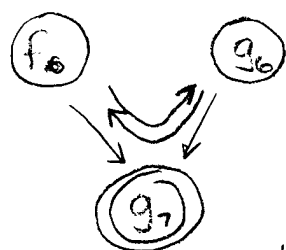# Problem 3b

If you know g_7, what blocks depend on a_1?

Continuing from @, but adding g_7 node as observed we get this graph: (in that region)

However, even if we apply bounce back, the paths from $f_7 \to g_8 \to h_8$ and $g_6 \to h_7 \to h_8$ remain undisturbed, so no additional nodes lose their dependence on a_1 (except g_7). Also, considering a situation like:

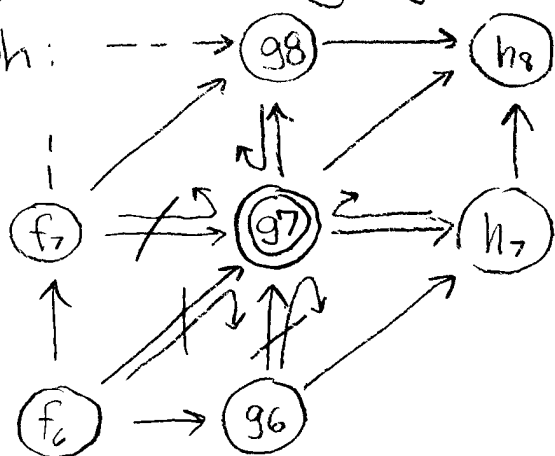$f_6 \not\perp g_6 | g_7$ because the ball goes through, since knowing g_7 couples f_6 & g_6.

<u>Nodes depend on a_1</u>: a_2 a_3 a_4, b_1 b_2 b_3, c_1 c_2, d_1 d_2,
e_1 e_2 e_3, f_1 f_2 f_3 f_4,
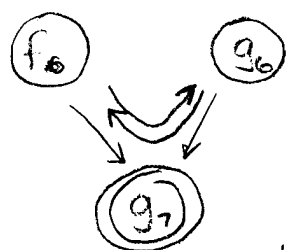g_1 g_2 g_3 g_4 g_5 g_6 g_8,
all h nodes.

Problem 3b

If you know g_7, what blocks depend on a_1?

Continuing from @, but adding g_7 node as observed we get this graph: (in that region)

However, even if we apply bounce back, the paths from $f_7 \rightarrow g_8 \rightarrow h_8$ and $g_6 \rightarrow h_7 \rightarrow h_8$ remain undisturbed, so no additional nodes lose their dependence on a_1 (except g_7). Also, considering a situation like:

$f_6 \cancel{\perp\!\!\!\perp} g_6 | g_7$ because the ball goes through, since knowing g_7 couples f_6 & g_6.

<u>Nodes depend on a_1</u>: $a_2\ a_3\ a_4$, $b_1\ b_2\ b_3$, $c_1\ c_2$, $d_1\ d_2$, $e_1\ e_2\ e_3$, $f_1\ f_2\ f_3\ f_4$, $g_1\ g_2\ g_3\ g_4\ g_5\ g_6\ g_8$, all h nodes.