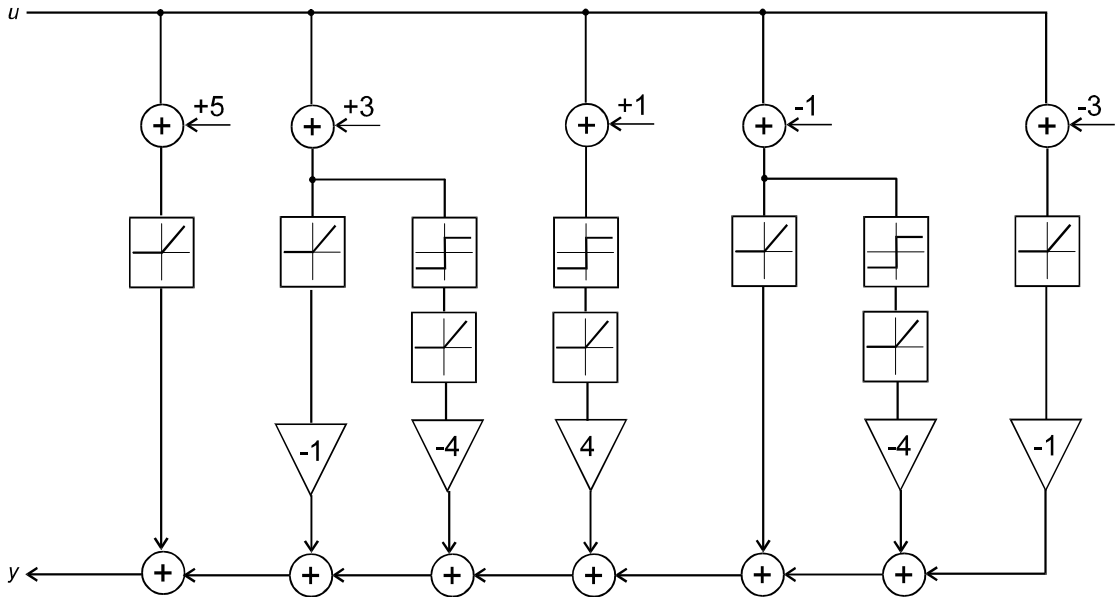
Rješenja zadataka za vježbu 1.

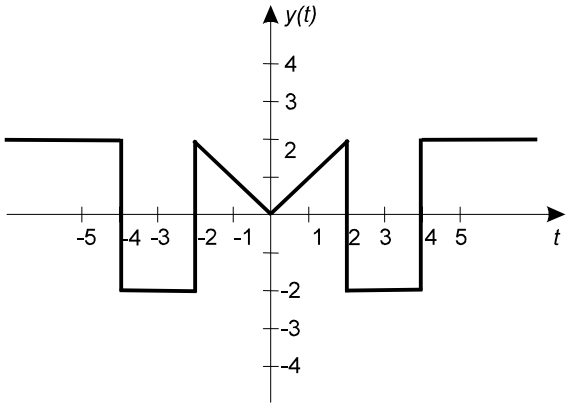
Rješenje 1. Zadani sustav je *implicitan* (dokazati!). Nadomjesni funkcijski blok:

$$\frac{y}{u} = \frac{f + g - 2f \cdot g}{1 - f \cdot g}$$

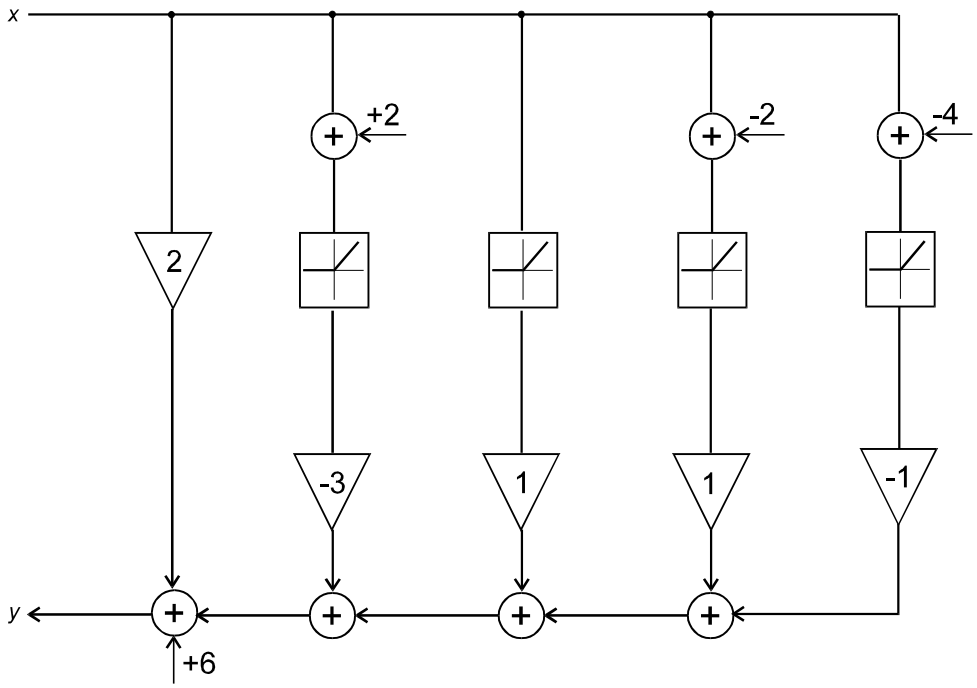
Rješenje 2. Jedno od mogućih rješenja:

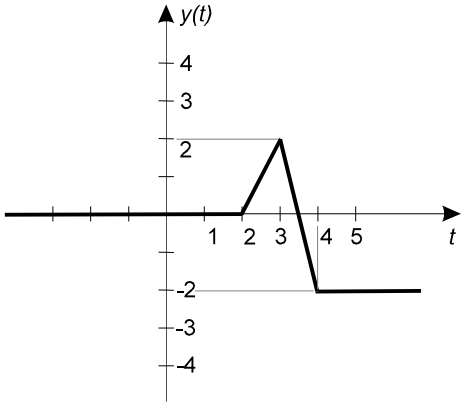


Odziv:

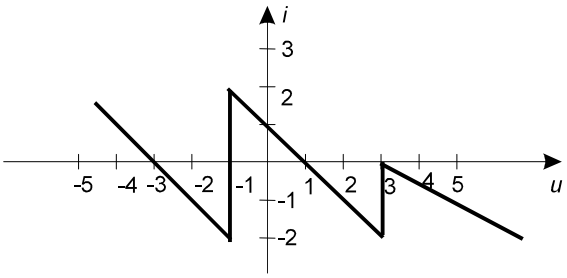


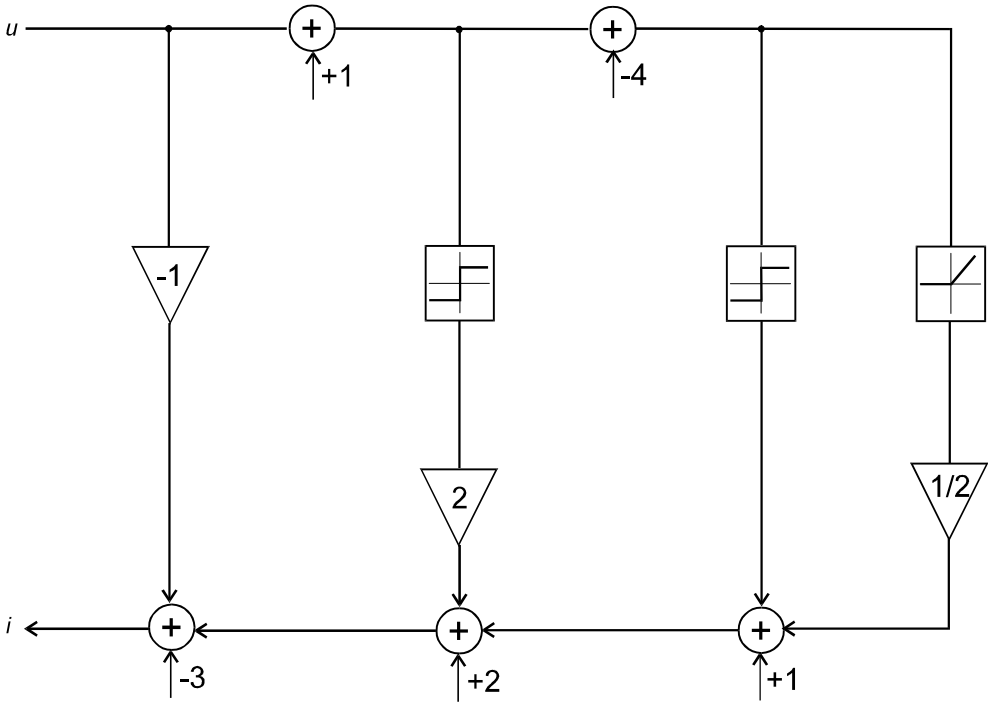
Rješenje 3.



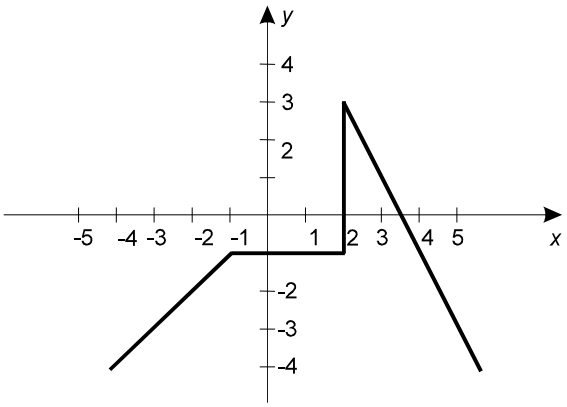


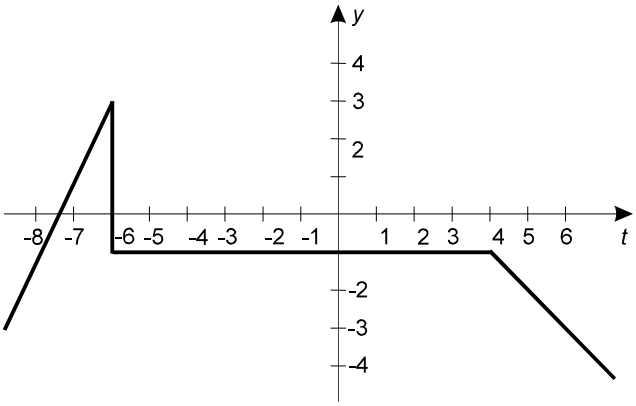
Rješenje 4.



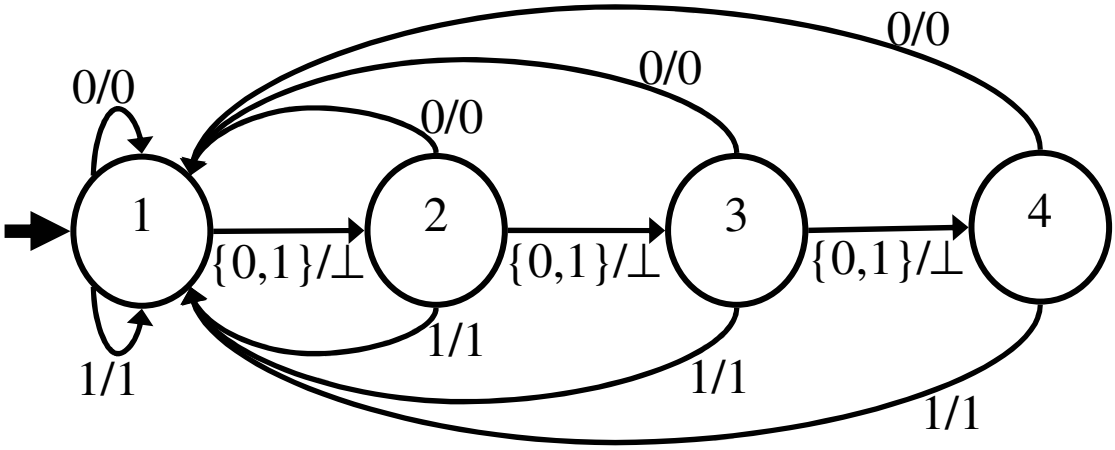


Rješenje 5.

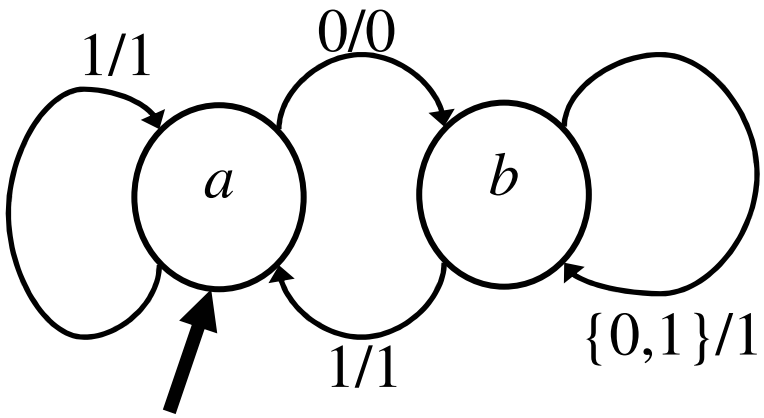




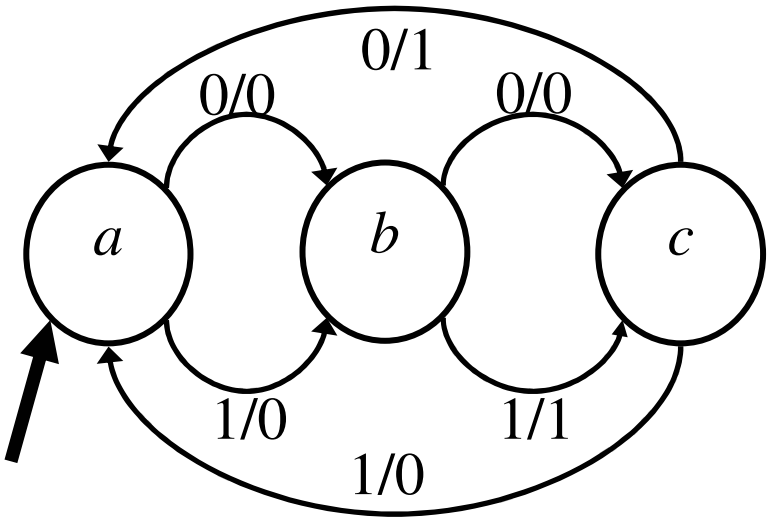
Rješenje 6. Automat ima četiri stanja, *Stanja* = {1, 2, 3, 4}. Ulazni i izlazni skupovi su *Ulazi* = {0, 1} i *Izlazi* = {0, 1, ⊥}. Početno stanje je *PočetnoStanje* = 1. Dijagram prijelaza dan je na slici.



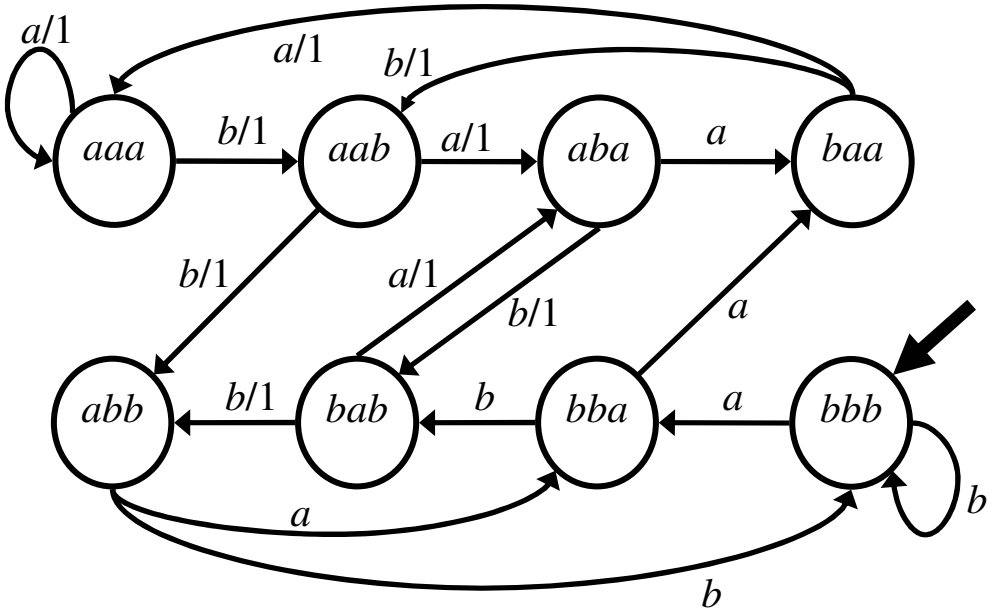
Rješenje 7. Za traženi automat je *Stanje* = {*a*, *b*}, *Ulazi* = {0, 1, *odsutan*}, *Izlazi* = {0, 1, *odsutan*}, *PočetnoStanje* = *a*. Funkcija prijelaza dana je slikom.



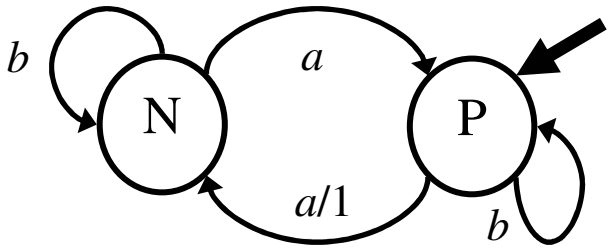
Rješenje 8. Automat je zadan sa: *Stanje* = {*a*, *b*, *c*}, *Ulazi* = {0, 1, *odsutan*}, *Izlazi* = {0, 1, *odsutan*}, *PočetnoStanje* = *a*. Funkcija prijelaza dana je dijagramom.



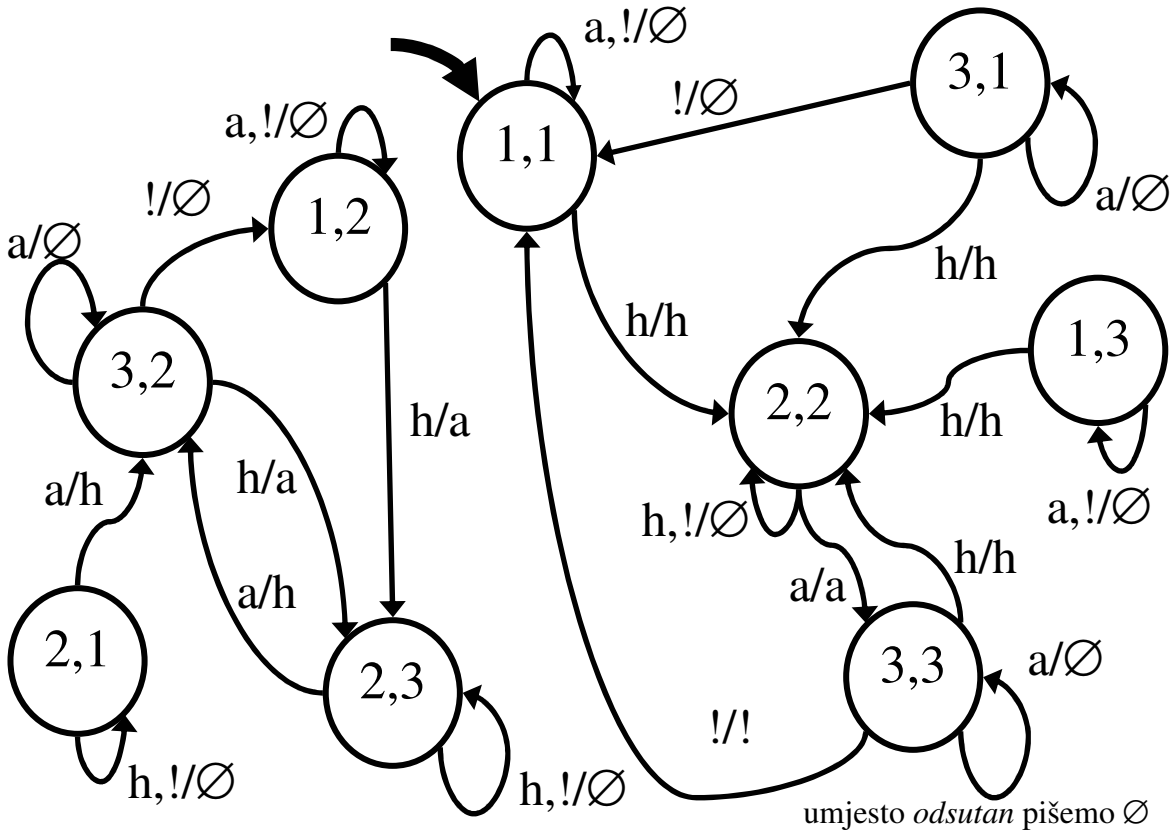
Rješenje 9. Automat je određen s: *Stanje* = {*aaa*, *aab*, *aba*, *abb*, *baa*, *bab*, *bba*, *bbb*}, *Ulazi* = {*a*, *b*, *odsutan*}, *Izlazi* = {1, *odsutan*}, *PočetnoStanje* = *bbb*. Funkcija prijelaza dana je dijagramom.



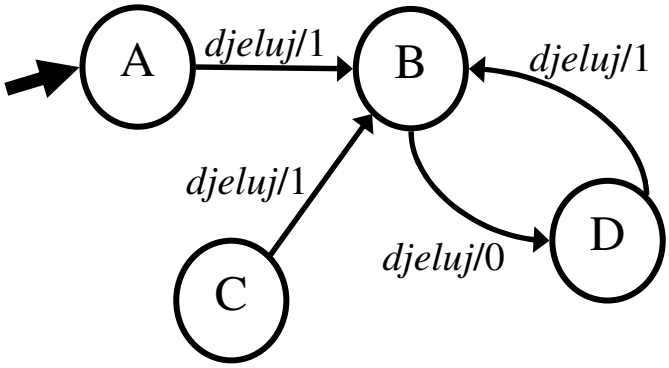
Rješenje 10. Automat je određen s: *Stanje* = {N, P}, *Ulazi* = {*a*, *b*, *odsutan*}, *Izlazi* = {1, *odsutan*}, *PočetnoStanje* = N. Funkcija prijelaza dana je dijagramom.



Rješenje 11. Funkcija prijelaza za oba automata je već dana u tekstu zadataka. Za *SmješkaB* je $Ulazi_B$ = {h, a, !, *Odsutan*}, $Izlazi_B$ = {1, 0, *Odsutan*}, $Stanja_B$ = {1, 2, 3} i $PočetnoStanje_B$ = 1, dok je za *SmješkaA* $Ulazi_A$ = {1, 0, *Odsutan*}, $Izlazi_A$ = {h, a, !, *Odsutan*}, $Stanja_A$ = {1, 2, 3} i $PočetnoStanje_A$ = 1. Dijagram prijelaza kaskade dan je na slici. Stanja {(1,2), (2,1), (3,2), (2,3), (3,1), (1,3)} nisu dostupna.



Rješenje 12. Automat je određen s: *Stanje* = {A, B, C, D}, *Ulazi* = {*djeluj*, *odsutan*}, *Izlazi* = {0, 1, *odsutan*}, *PočetnoStanje* = A. Funkcija prijelaza dana je dijagramom. Stanje C nije dostupno.



Rješenje 13. Širina dovedenog impulsa je:

$$t > 2\ln\frac{U}{U-1} = 2\ln 3$$