

**13.1.** Zminimalizować następujący automat skończony:

$$A = \langle T=\{0,1\}, Q=\{A,B,C,D,E,F,G\}, F=\{C,D,E\}, q_0=A, \delta \rangle$$

$\delta(A,0) = \{B\}$	$\delta(A,1) = \{C\}$
$\delta(B,0) = \{A\}$	$\delta(B,1) = \{D\}$
$\delta(C,0) = \{E\}$	$\delta(C,1) = \{F\}$
$\delta(D,0) = \{E\}$	$\delta(D,1) = \{F\}$
$\delta(E,0) = \{E\}$	$\delta(E,1) = \{F\}$
$\delta(F,0) = \{F\}$	$\delta(F,1) = \{F\}$
$\delta(G,0) = \{B\}$	$\delta(G,1) = \{A\}$

**13.2.** Zminimalizować następujący automat skończony:

$$A = \langle T=\{a,b\}, Q=\{1,2,3,4,5,6,7\}, F=\{3,5\}, q_0=1, \delta \rangle$$

$\delta(1,a) = \{2\}$	$\delta(1,b) = \{6\}$
$\delta(2,a) = \{3\}$	$\delta(2,b) = \{6\}$
$\delta(3,a) = \{4\}$	$\delta(3,b) = \{6\}$
$\delta(4,a) = \{6\}$	$\delta(4,b) = \{2\}$
$\delta(5,a) = \{4\}$	$\delta(5,b) = \{2\}$
$\delta(6,a) = \{5\}$	$\delta(6,b) = \{2\}$
$\delta(7,a) = \{6\}$	$\delta(7,b) = \{2\}$

**13.3.** Zminimalizować następujący automat skończony:

$$A = \langle T=\{0,1\}, Q=\{A,B,C,D,E,F,G\}, F=\{E,F\}, q_0=A, \delta \rangle$$

$\delta(A,0) = \{A\}$	$\delta(A,1) = \{B\}$
$\delta(B,0) = \{E\}$	$\delta(B,1) = \{F\}$
$\delta(C,0) = \{A\}$	$\delta(C,1) = \{B\}$
$\delta(D,0) = \{G\}$	$\delta(D,1) = \{A\}$
$\delta(E,0) = \{D\}$	$\delta(E,1) = \{F\}$
$\delta(F,0) = \{E\}$	$\delta(F,1) = \{G\}$
$\delta(G,0) = \{D\}$	$\delta(G,1) = \{C\}$

**13.4.** Zminimalizować następujący automat skończony:

$$A = \langle T=\{a,b\}, Q=\{0,1,2,3,4,5,6,7\}, F=\{1,2,4,5\}, q_0=0, \delta \rangle$$

$\delta(0,a) = \{1\}$	$\delta(0,b) = \{4\}$
$\delta(1,a) = \{2\}$	$\delta(1,b) = \{3\}$
$\delta(2,a) = \{0\}$	$\delta(2,b) = \{5\}$
$\delta(3,a) = \{2\}$	$\delta(3,b) = \{6\}$
$\delta(4,a) = \{5\}$	$\delta(4,b) = \{6\}$
$\delta(5,a) = \{0\}$	$\delta(5,b) = \{2\}$
$\delta(6,a) = \{5\}$	$\delta(6,b) = \{3\}$
$\delta(7,a) = \{5\}$	$\delta(7,b) = \{2\}$

**13.5.** Zminimalizować następujący automat skończony:

$A = \langle T=\{0,1\}, Q=\{A,B,C,D,E,F,G,H\}, F=\{E,F\}, q_0=A, \delta \rangle$

$\delta(A,0) = \{H\}$	$\delta(A,1) = \{B\}$
$\delta(B,0) = \{H\}$	$\delta(B,1) = \{A\}$
$\delta(C,0) = \{A\}$	$\delta(C,1) = \{D\}$
$\delta(D,0) = \{B\}$	$\delta(D,1) = \{C\}$
$\delta(E,0) = \{C\}$	$\delta(E,1) = \{F\}$
$\delta(F,0) = \{D\}$	$\delta(F,1) = \{E\}$
$\delta(G,0) = \{A\}$	$\delta(G,1) = \{G\}$
$\delta(H,0) = \{E\}$	$\delta(H,1) = \{C\}$

**13.6.** Zminimalizować następujący automat skończony:

$A = \langle T=\{a,b\}, Q=\{0,1,2,3,4,5,6,7\}, F=\{5,6\}, q_0=0, \delta \rangle$

$\delta(0,a) = \{1\}$	$\delta(0,b) = \{2\}$
$\delta(1,a) = \{5\}$	$\delta(1,b) = \{3\}$
$\delta(2,a) = \{6\}$	$\delta(2,b) = \{4\}$
$\delta(3,a) = \{0\}$	$\delta(3,b) = \{6\}$
$\delta(4,a) = \{0\}$	$\delta(4,b) = \{5\}$
$\delta(5,a) = \{3\}$	$\delta(5,b) = \{6\}$
$\delta(6,a) = \{4\}$	$\delta(6,b) = \{5\}$
$\delta(7,a) = \{6\}$	$\delta(7,b) = \{5\}$

**13.7.** Zminimalizować następujący automat skończony:

$A = \langle T=\{a,b\}, Q=\{1,2,3,4,5,6,7\}, F=\{3,5\}, q_0=1, \delta \rangle$

$\delta(1,a) = \{2\}$	$\delta(1,b) = \{6\}$
$\delta(2,a) = \{3\}$	$\delta(2,b) = \{6\}$
$\delta(3,a) = \{4\}$	$\delta(3,b) = \{6\}$
$\delta(4,a) = \{6\}$	$\delta(4,b) = \{2\}$
$\delta(5,a) = \{4\}$	$\delta(5,b) = \{2\}$
$\delta(6,a) = \{5\}$	$\delta(6,b) = \{2\}$
$\delta(7,a) = \{6\}$	$\delta(7,b) = \{2\}$