

Najděte Jordanův kanonický tvar matice  $A$ , která splňuje vlastnosti uvedené v zadání úlohy.

**Úloha 1.**  $p_A(\lambda) = (\lambda - 1)(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)(\lambda - 9)(\lambda - 10)$ .

**Úloha 2.**  $p_A(\lambda) = (\lambda - 1)^{10}$ ,  $\text{rank}(A - I) = 0$ .

**Úloha 3.**  $p_A(\lambda) = (\lambda - 1)^{10}$ ,  $\text{rank}(A - I) = 1$ .

**Úloha 4.**  $p_A(\lambda) = (\lambda - 1)^9(\lambda - 2)$ ,  $\text{rank}(A - I) = 1$ .

**Úloha 5.**  $p_A(\lambda) = (\lambda - 1)^9(\lambda - 2)$ ,  $\text{rank}(A - I) = 2$ .

**Úloha 6.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)(\lambda - 3)$ ,  $\text{rank}(A - I) = 2$ .

**Úloha 7.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)(\lambda - 3)$ ,  $\text{rank}(A - I) = 3$ .

**Úloha 8.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)(\lambda - 3)(\lambda - 4)$ ,  $\text{rank}(A - I) = 3$ .

**Úloha 9.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)(\lambda - 3)(\lambda - 4)$ ,  $\text{rank}(A - I) = 4$ .

**Úloha 10.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)$ ,  $\text{rank}(A - I) = 4$ .

**Úloha 11.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)$ ,  $\text{rank}(A - I) = 5$ .

**Úloha 12.**  $p_A(\lambda) = (\lambda - 1)^5(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)$ ,  $\text{rank}(A - I) = 5$ .

**Úloha 13.**  $p_A(\lambda) = (\lambda - 1)^5(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)$ ,  $\text{rank}(A - I) = 6$ .

**Úloha 14.**  $p_A(\lambda) = (\lambda - 1)^4(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)$ ,  $\text{rank}(A - I) = 6$ .

**Úloha 15.**  $p_A(\lambda) = (\lambda - 1)^4(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)$ ,  $\text{rank}(A - I) = 7$ .

**Úloha 16.**  $p_A(\lambda) = (\lambda - 1)^3(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)$ ,  $\text{rank}(A - I) = 7$ .

**Úloha 17.**  $p_A(\lambda) = (\lambda - 1)^2(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)(\lambda - 9)$ ,  $\text{rank}(A - I) = 8$ .

**Úloha 18.**  $p_A(\lambda) = (\lambda - 1)^3(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)$ ,  $\text{rank}(A - I) = 8$ .

**Úloha 19.**  $p_A(\lambda) = (\lambda - 1)^2(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)(\lambda - 9)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 20.**  $p_A(\lambda) = (\lambda - 1)^3(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)(\lambda - 8)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 21.**  $p_A(\lambda) = (\lambda - 1)^4(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)(\lambda - 7)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 22.**  $p_A(\lambda) = (\lambda - 1)^5(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)(\lambda - 6)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 23.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)(\lambda - 3)(\lambda - 4)(\lambda - 5)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 24.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)(\lambda - 3)(\lambda - 4)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 25.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)(\lambda - 3)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 26.**  $p_A(\lambda) = (\lambda - 1)^9(\lambda - 2)$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 27.**  $p_A(\lambda) = (\lambda - 1)^{10}$ ,  $\text{rank}(A - I) = 9$ .

**Úloha 28.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)^2$ ,  $\text{rank}(A - I) = 2$ ,  $\text{rank}(A - 2I) = 8$ .

**Úloha 29.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)^2$ ,  $\text{rank}(A - I) = 2$ ,  $\text{rank}(A - 2I) = 9$ .

**Úloha 30.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)^2$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 8$ .

**Úloha 31.**  $p_A(\lambda) = (\lambda - 1)^8(\lambda - 2)^2$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 9$ .

**Úloha 32.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)^3$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 7$ .

**Úloha 33.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)^2(\lambda - 3)$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 8$ .

**Úloha 34.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)^3$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 8$ .

**Úloha 35.**  $p_A(\lambda) = (\lambda - 1)^7(\lambda - 2)^2(\lambda - 3)$ ,  $\text{rank}(A - I) = 3$ ,  $\text{rank}(A - 2I) = 9$ .























































**Úloha 806.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 7$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 6$ .

**Úloha 807.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 7$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 7$ .

**Úloha 808.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 4$ ,  $\text{rank}(A - 2I) = 6$ .

**Úloha 809.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 4$ ,  $\text{rank}(A - 2I) = 7$ .

**Úloha 810.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 4$ ,  $\text{rank}(A - 2I) = 9$ .

**Úloha 811.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 5$ ,  $\text{rank}(A - 2I) = 6$ .

**Úloha 812.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 5$ ,  $\text{rank}(A - 2I) = 7$ .

**Úloha 813.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 5$ ,  $\text{rank}(A - 2I) = 9$ .

**Úloha 814.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 4$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 6$ .

**Úloha 815.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 4$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 7$ .

**Úloha 816.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 5$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 6$ .

**Úloha 817.**  $p_A(\lambda) = (\lambda - 1)^6(\lambda - 2)^4$ ,  $\text{rank}(A - I) = 8$ ,  $\text{rank}((A - I)^2) = 6$ ,  $\text{rank}((A - I)^3) = 5$ ,  $\text{rank}(A - 2I) = 8$ ,  $\text{rank}((A - 2I)^2) = 7$ .