```
(* 2.1 LABOS: MatrixAlgebra.nb *)

(* zadavanje matrice *)
A = {{a, b}, {c, d}}
```

$$\{\{a, b\}, \{c, d\}\}$$

```
(* ispis matričnog oblika matrice *)
MatrixForm[A]
```

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix}$$

```
(* drugi redak matrice A *)
A[[2]]
```

$$\{c, d\}$$

```
(* element matrice A u prvom redku i drugom stupcu *)
A[[1, 2]]
```

$$b$$

```
B = {{s, t}, {p, q}}
```

$$\{\{s, t\}, \{p, q\}\}$$

```
MatrixForm[B]
```

$$\begin{pmatrix} s & t \\ p & q \end{pmatrix}$$

```
(* zbroj matrica *)
MatrixForm[A + B]
```

$$\begin{pmatrix} a+s & b+t \\ c+p & d+q \end{pmatrix}$$

```
(* linearna kombinacija matrica *)
MatrixForm[2 A - B]
```

$$\begin{pmatrix} 2a-s & 2b-t \\ 2c-p & 2d-q \end{pmatrix}$$

```
(* produkt matrica *)
MatrixForm[A.B]
```

$$\begin{pmatrix} b\,p+a\,s & b\,q+a\,t \\ d\,p+c\,s & d\,q+c\,t \end{pmatrix}$$

```
(* kvadratna potencija matrice A *)
MatrixPower[A, 2]
MatrixForm[MatrixPower[A, 2]]
```

$$\{\{a^2+b\,c,\ a\,b+b\,d\},\ \{a\,c+c\,d,\ b\,c+d^2\}\}$$

$$\begin{pmatrix} a^2+b\,c & a\,b+b\,d \\ a\,c+c\,d & b\,c+d^2 \end{pmatrix}$$

```
(* jedinična matrica reda 3 *)
IdentityMatrix[3]
MatrixForm[IdentityMatrix[3]]
```

```
{{1, 0, 0}, {0, 1, 0}, {0, 0, 1}}
```

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

```
(* transponirana matrica od A *)
Transpose[A]
MatrixForm[Transpose[A]]
```

```
{{a, c}, {b, d}}
```

$$\begin{pmatrix} a & c \\ b & d \end{pmatrix}$$

```
(* determinanta od A *)
Det[A]
```

$$-b\,c + a\,d$$

```
(* inverzna matrica od A *)
Inverse[A]
```

$$\left\{\left\{\frac{d}{-b\,c + a\,d}, -\frac{b}{-b\,c + a\,d}\right\}, \left\{-\frac{c}{-b\,c + a\,d}, \frac{a}{-b\,c + a\,d}\right\}\right\}$$

```
MatrixForm[Inverse[A]]
```

$$\begin{pmatrix} \frac{d}{-b\,c+a\,d} & -\frac{b}{-b\,c+a\,d} \\ -\frac{c}{-b\,c+a\,d} & \frac{a}{-b\,c+a\,d} \end{pmatrix}$$

```
(* trag matrice A *)
Tr[A]
```

$$a + d$$