

Škola: Osnovna škola Vladimira Pavlovića u Čapljini

Razred: VIII.

Nastavni predmet: matematika

Datum: 30.04.2020.g.

Nastavna jedinka: Metoda suprotnih koeficijenata – vježba

Rješenje domaće zadaće

The image shows two systems of linear equations solved using the elimination method. The solutions are written in blue ink on a white background. The first system (c) has equations $x + 3y = 5$ and $x - 3y = 5$. Adding them gives $2x = 10$, so $x = 5$. Substituting $x = 5$ into the first equation gives $5 + 3y = 5$, so $3y = 0$ and $y = 0$. The solution is $(5, 0)$. The second system (d) has equations $2x - y = 4$ and $3x + y = 1$. Adding them gives $5x = 5$, so $x = 1$. Substituting $x = 1$ into the first equation gives $2 - y = 4$, so $-y = 2$ and $y = -2$. The solution is $(1, -2)$. Both solutions are boxed in red.

$$\begin{array}{l} \text{c) } \left. \begin{array}{l} x + 3y = 5 \\ x - 3y = 5 \end{array} \right\} + \\ \hline 2x = 10 \quad | :2 \\ \underline{x = 5} \\ \\ x + 3y = 5 \\ 5 + 3y = 5 \\ 3y = 0 \quad | :3 \\ \underline{y = 0} \\ \boxed{(5, 0)} \end{array}$$
$$\begin{array}{l} \text{d) } \left. \begin{array}{l} 2x - y = 4 \\ 3x + y = 1 \end{array} \right\} + \\ \hline 5x = 5 \quad | :5 \\ \underline{x = 1} \\ \\ 2x - y = 4 \\ 2 - y = 4 \\ -y = 2 \\ \underline{y = -2} \\ \boxed{(1, -2)} \end{array}$$

Za vježbu uraditi 2. Zadatak pod a), b), c) i d) na 183 stranici udžbenika.

Rješenje:

2. Metodom suprotnih koeficijenata riješi
 slijedeće sustave i provjeri dobivena
 rješenja metodom supstitucije.

$$\begin{array}{r}
 \text{a) } -4x + 3y = -23 \\
 \quad 4x + 3y = 41 \\
 \hline
 \quad 6y = 18 \quad | :6 \\
 \quad \quad y = 3 \\
 -4x + 9 = -23 \\
 -4x = -32 \quad | :(-4) \\
 \quad \quad x = 8 \\
 \hline
 \boxed{(8, 3)}
 \end{array}$$

$$\begin{array}{r}
 \text{b) } 3x + 8y = 23 \\
 \quad -3x + 2y = -13 \\
 \hline
 \quad 10y = 10 \quad | :10 \\
 \quad \quad y = 1 \\
 3x + 8 = 23 \\
 3x = 15 \quad | :3 \\
 \quad \quad x = 5 \\
 \hline
 \boxed{(5, 1)}
 \end{array}$$

$$\begin{array}{r}
 \text{c) } 3x + 8y = 23 \quad | \cdot (-1) \\
 \quad 3x - 2y = 13 \\
 \hline
 + \left\{ \begin{array}{l} -3x - 8y = -23 \\ \quad 3x - 2y = 13 \end{array} \right. \\
 \hline
 \quad -10y = -10 \quad | :(-10) \\
 \quad \quad y = 1 \\
 3x - 2y = 13 \\
 3x - 2 = 13 \\
 3x = 15 \quad | :3 \\
 \quad \quad x = 5 \\
 \hline
 \boxed{(5, 1)}
 \end{array}$$

$$\begin{array}{r}
 \text{d) } 5x + 6y = 43 \\
 \quad 5x - 2y = 19 \quad | \cdot (-1) \\
 \hline
 + \left\{ \begin{array}{l} 5x + 6y = 43 \\ -5x + 2y = -19 \end{array} \right. \\
 \hline
 \quad 8y = 24 \quad | :8 \\
 \quad \quad y = 3 \\
 5x - 2y = 19 \\
 5x - 6 = 19 \\
 5x = 25 \quad | :5 \\
 \quad \quad x = 5 \\
 \hline
 \boxed{(5, 3)}
 \end{array}$$

Za domaću zadaću uraditi 2. pod e) i f) na 183. stranici u udžbeniku.