



Řešení: Algebraické dlaždice – mnohočleny

Sečtěte:

$$1. (x^2 + 4x) + (x^2 + 5x) = 2x^2 + 9x$$

The screenshot shows the Mathigon Algebra Tiles interface. On the left, a sidebar lists categories: Tiles, Geometry, Numbers, Fractions, and Algebra. Under Algebra Tiles, there are positive and negative tiles for x^2 , x , y , xy , and y^2 . The main workspace shows two rows of tiles representing the sum of two polynomials. The first row consists of one blue x^2 tile followed by four green x tiles. The second row consists of one blue x^2 tile followed by five green x tiles. A toolbar at the bottom includes a mouse cursor, eraser, move tool, grid, x^2 tile, and color palette.

$$2. 3y^2 + x + y^2 + 2x = 4y^2 + 3x$$

The screenshot shows the Mathigon Algebra Tiles interface. The main workspace displays the addition of two polynomials. The first row contains three purple y^2 tiles, one green x tile, one purple y^2 tile, and two green x tiles. The second row contains one purple y^2 tile and two green x tiles. The sidebar and toolbar are identical to the previous screenshot.



$$3. \ 2xy + (2x^2 - xy) - 2x^2 = xy$$

$$4. \ (x + 2xy) + (-3xy + 5x) = 6x - xy$$



$$5. (3x^2 + y^2 - xy) + (x^2 - 5xy - 2y^2) = 4x^2 - y^2 - 6xy$$

$$6. (y^2 + 3x^2 + xy) + (2x^2 - 5xy + y^2) = 5x^2 + 2y^2 - 4xy$$



Odečtěte:

1. $(2x^2 + 4x) - (x^2 + 5x) = x^2 - x$

The screenshot shows the Tiles app interface. On the left is a sidebar with categories: Tiles, Geometry, Numbers, Fractions, and Algebra. Under Algebra, there are 'Algebra Tiles' with a grid of tiles: 1 (orange), x (green), y (teal), x (green), x^2 (blue), xy (purple), y (teal), xy (purple), y^2 (purple), -1 (pink), -x (pink), -x^2 (pink), -y (pink), -xy (pink), and -y^2 (pink). The main workspace shows two rows of tiles. The top row has two blue x^2 tiles and four green x tiles. The bottom row has one blue x^2 tile and five green x tiles. A toolbar at the bottom includes a cursor, eraser, move tool, text tool, x^2 tile, and a color palette.

Po změně znamének (mínus před závorkou):

The screenshot shows the Tiles app interface. On the left is a sidebar with categories: Tiles, Geometry, Numbers, Fractions, and Algebra. Under Algebra, there are 'Algebra Tiles' with a grid of tiles: 1 (orange), x (green), y (teal), x (green), x^2 (blue), xy (purple), y (teal), xy (purple), y^2 (purple), -1 (pink), -x (pink), -x^2 (pink), -y (pink), -xy (pink), and -y^2 (pink). The main workspace shows two rows of tiles. The top row has two blue x^2 tiles and four green x tiles. The bottom row has one pink -x^2 tile and five pink -x tiles. A toolbar at the bottom includes a cursor, eraser, move tool, text tool, x^2 tile, and a color palette.



$$2. (2x - 3x^2) - (x^2 - 5x) = -4x^2 + 7x$$

The screenshot shows the Mathigon Algebra Tiles interface. On the left is a sidebar with categories: Tiles, Geometry, Numbers, Fractions, and Algebra. Under Algebra, there are 'Algebra Tiles' with a grid of tiles: 1 (orange), x (green), y (teal), x^2 (blue), xy (purple), y^2 (pink), -1 (red), -x (red), -x^2 (red), -y (red), -xy (red), and -y^2 (red). The main workspace contains two rows of tiles. The top row has two green 'x' tiles, followed by three red '-x^2' tiles. The bottom row has one blue 'x^2' tile, followed by five red '-x' tiles. A toolbar at the bottom includes a mouse cursor, eraser, move tool, text tool, x^2 tile, and a color palette.

Po změně znamének (mínus před závorkou):

The screenshot shows the Mathigon Algebra Tiles interface after changing the signs. The top row remains the same with two green 'x' tiles and three red '-x^2' tiles. The bottom row now consists of one red '-x^2' tile followed by five green 'x' tiles. The sidebar and toolbar are identical to the previous screenshot.



3. $(4xy - y^2) - x^2 - 5xy = -x^2 - y^2 - xy$

4. $4y^2 - x^2 - 5xy + 2xy + 2y^2 = 6y^2 - x^2 - 3xy$



$$5. x^2 - 5xy + 3x^2 - (2x^2 - 3xy) = 2x^2 - 2xy$$

The screenshot shows the Mathigon Algebra Tiles interface. On the left is a sidebar with a grid of algebra tiles: 1 (orange), x (green), y (teal), x^2 (blue), xy (purple), -x (pink), -x^2 (magenta), -y (pink), -xy (magenta), and -y^2 (magenta). The main workspace contains a grid of tiles representing the expression $x^2 - 5xy + 3x^2 - (2x^2 - 3xy)$. The tiles are arranged as follows: a single blue x^2 tile at the top left; a row of five magenta $-xy$ tiles below it; a row of three blue x^2 tiles below that; and a bottom row consisting of two blue x^2 tiles, followed by three magenta $-xy$ tiles. A toolbar at the bottom right includes a mouse cursor, eraser, move tool, text tool, x^2 tile, and a color palette.

Po změně znamének (mínus před závorkou):

This screenshot shows the same Mathigon Algebra Tiles interface after the minus sign has been removed from the parentheses in the equation. The arrangement of tiles in the main workspace is now: a single blue x^2 tile at the top left; a row of five magenta $-xy$ tiles below it; a row of three blue x^2 tiles below that; and a bottom row consisting of two magenta $-x^2$ tiles, followed by three blue xy tiles. The sidebar and toolbar remain the same as in the previous screenshot.



$$6. (5x^2 + 2y^2 + yx) - (x^2 - y^2 + 3xy) = 4x^2 + 3y^2 - 2xy$$

Po změně znamének (mínus před závorkou):