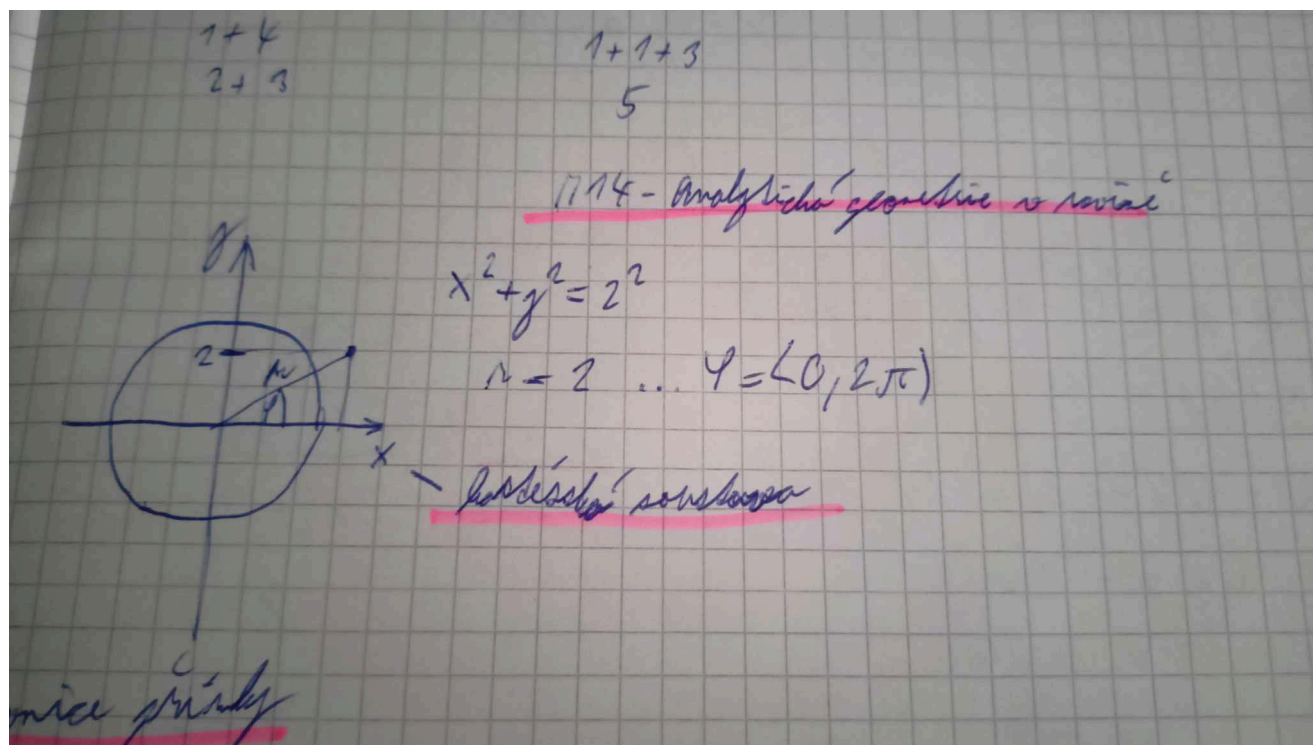


## M14 - Analytická geometrie v rovině



### Rovnice přímky

#### Směrnice tvar

$$y = ax + b$$

#### Obecná rovnice přímky

$$ax + by + c = 0$$

$$\begin{aligned}
 x+y &= 2 \quad | :2 \\
 \frac{x}{2} + \frac{y}{2} &= 1 \\
 \vec{n} &= \overrightarrow{AB} \\
 \vec{n} &= (-5, 5) \\
 x &= 5 - 5t \\
 y &= -3 + 5t \\
 \vec{n} &= (5, 5) \\
 0 &= ax + by + c \\
 0 &= 5x + 5y - 10 \quad | :5 \\
 0 &= x + y - 2 \\
 c &= -10
 \end{aligned}$$

$A = [5, -3]$   
 $B = [0, 2]$   
 $\gamma = A + t \cdot \vec{n}, t \in \mathbb{R}$

-Př.:

$$2x - y = 1$$

$$x + 3y = 11$$

## Dosazovací metoda

$$\begin{aligned}
 \text{-př.:} \quad 2x - y &= 1 \Rightarrow y = 2x - 1 \\
 x + 3y &= 11 \\
 \hline
 x + 3(2x - 1) &= 11 \\
 x + 6x - 3 &= 11 \\
 7x &= 14 \\
 x &= 2 \\
 y &= 3
 \end{aligned}$$

dosazovací  
metoda

## Odčítací metoda

Handwritten solution of a system of linear equations using the subtraction method on grid paper:

$$\begin{array}{r} 2x - y = 1 \\ 2x + 6y = 27 \\ \hline 0x + 7y = 26 \\ y = 2 \\ x = 2 \end{array}$$

On the left, the words "odčítací metoda" are written and underlined in red.

## Gaussova eliminace

$$\left[ \begin{array}{cc|c} 2 & -1 & 1 \\ 1 & 3 & 11 \end{array} \right]$$

$$\left[ \begin{array}{cc|c} 1 & 3 & 11 \\ 2 & -1 & 1 \end{array} \right]$$

$$\left[ \begin{array}{cc|c} 1 & 3 & 11 \\ 0 & -7 & -21 \end{array} \right]$$

$$\left[ \begin{array}{cc|c} 1 & 3 & 11 \\ 0 & 1 & 3 \end{array} \right]$$

$$\left[ \begin{array}{cc|c} 1 & 0 & 2 \\ 0 & 1 & 3 \end{array} \right]$$

$$x = 2$$

$$y = 3$$