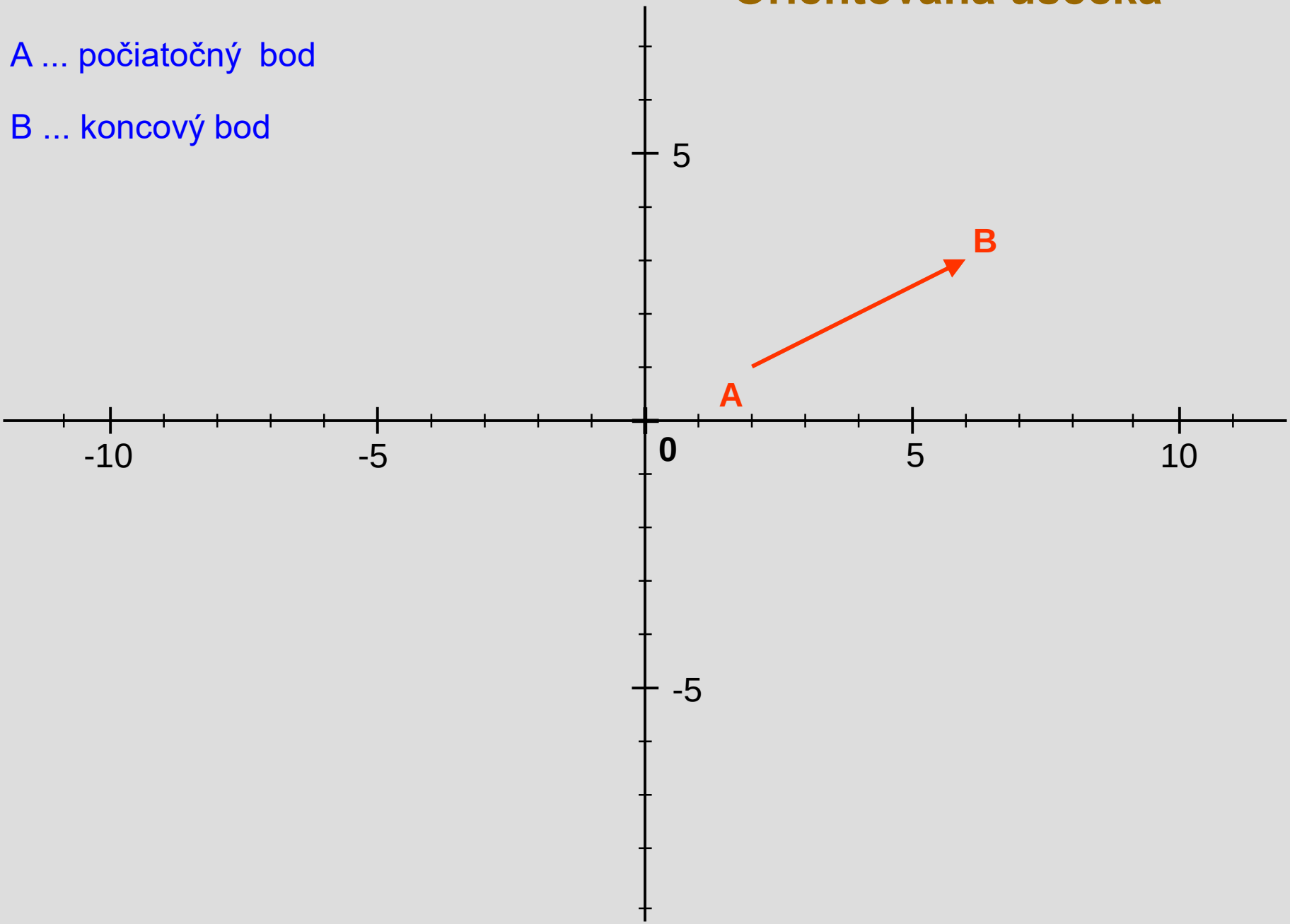
Vektory

Orientovaná úsečka

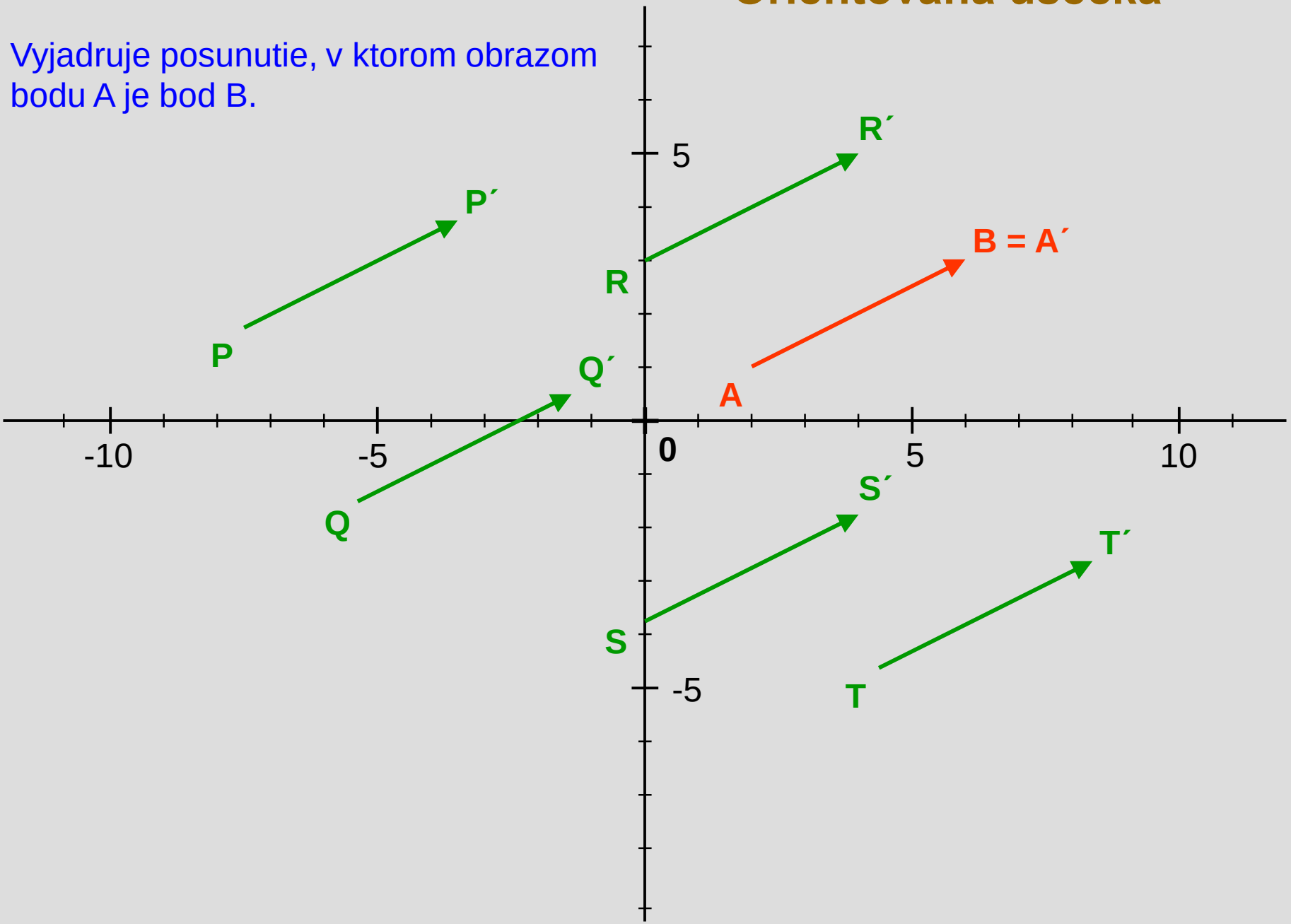
A ... počiatočný bod

B ... koncový bod

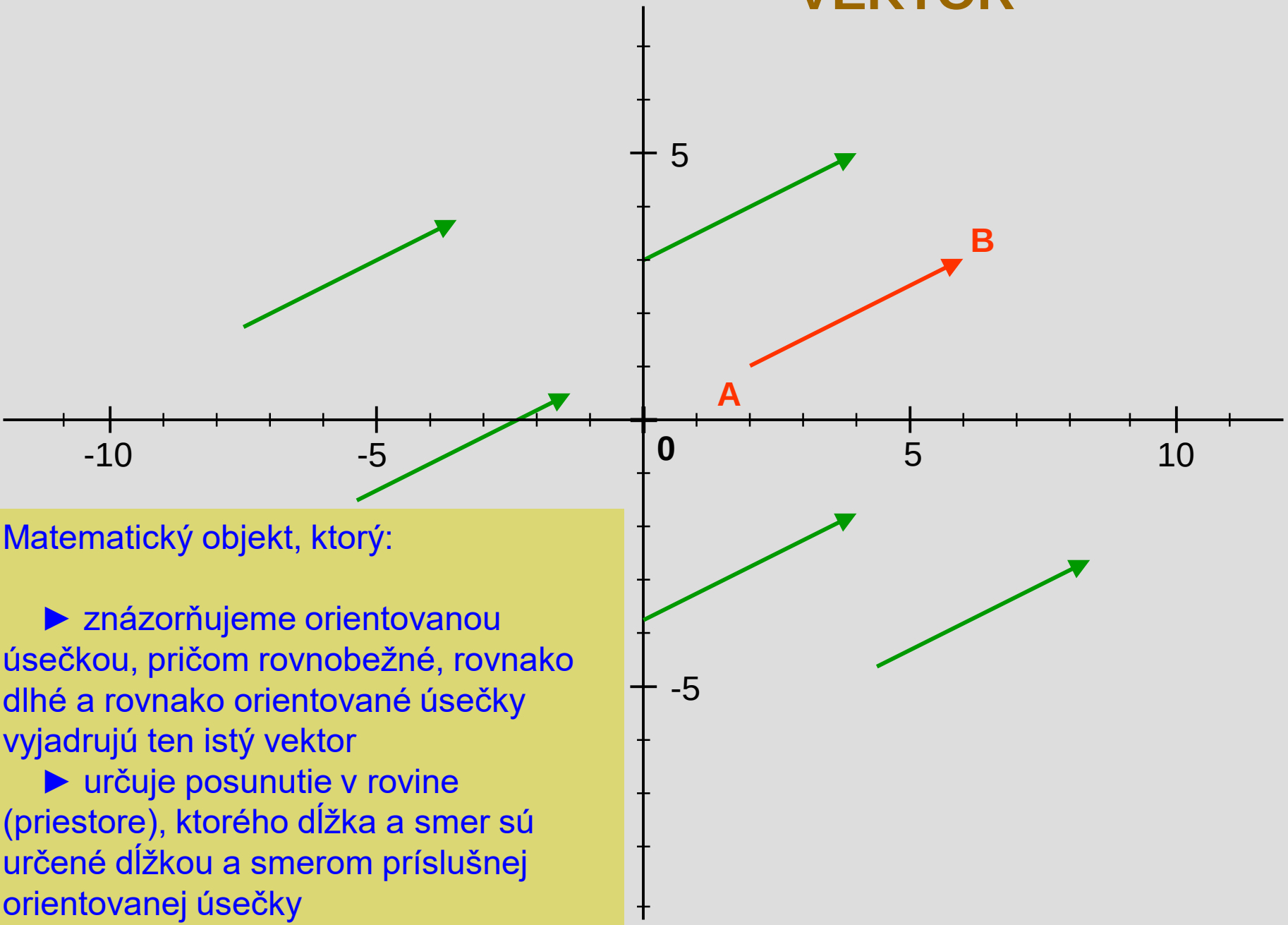


Orientovaná úsečka

Vyjadruje posunutie, v ktorom obrazom bodu A je bod B.



VEKTOR



Matematický objekt, ktorý:

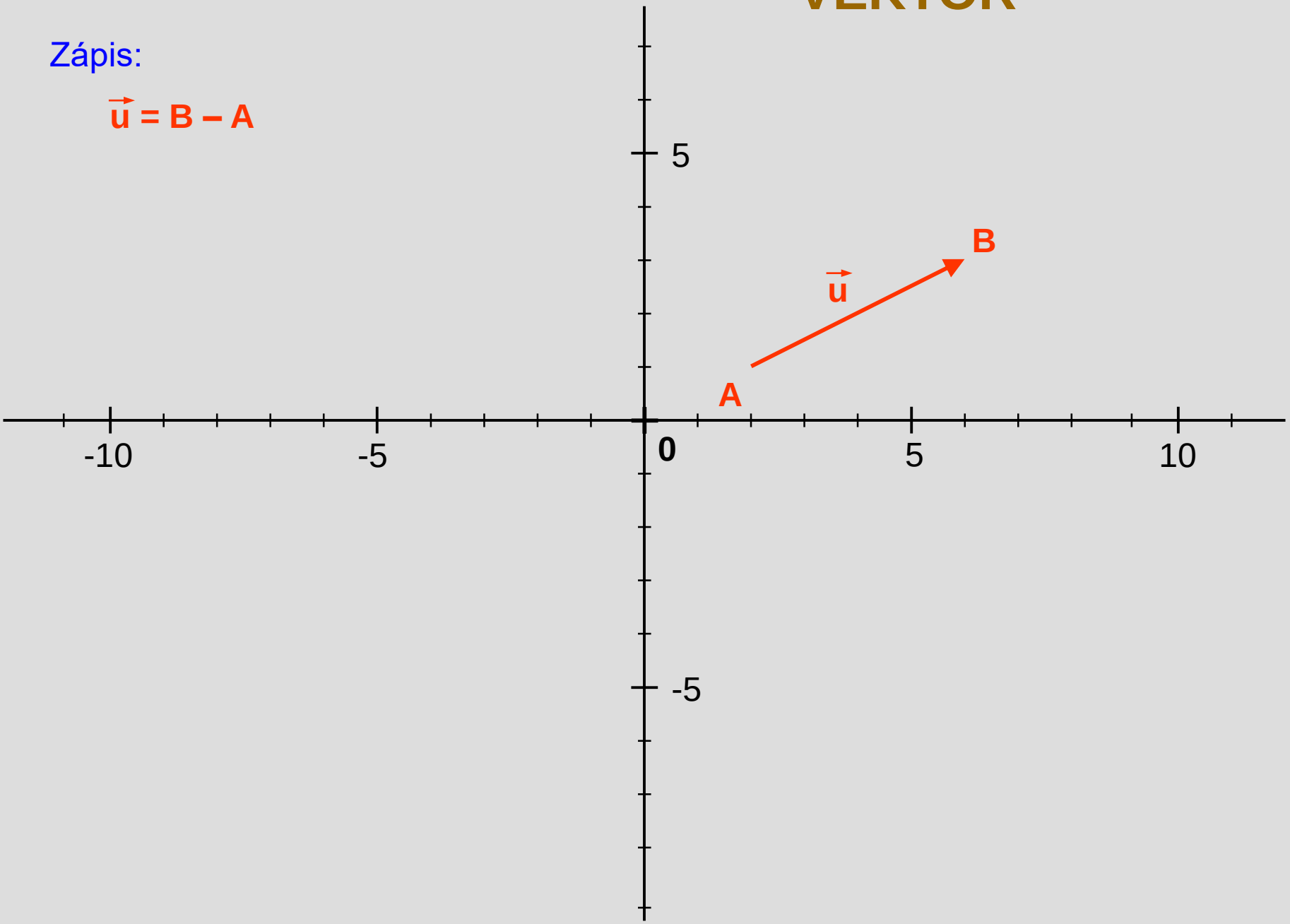
► znázorňujeme orientovanou úsečkou, pričom rovnobežné, rovnako dlhé a rovnako orientované úsečky vyjadrujú ten istý vektor

► určuje posunutie v rovine (priestore), ktorého dĺžka a smer sú určené dĺžkou a smerom príslušnej orientovanej úsečky

VEKTOR

Zápis:

$\vec{u} = B - A$

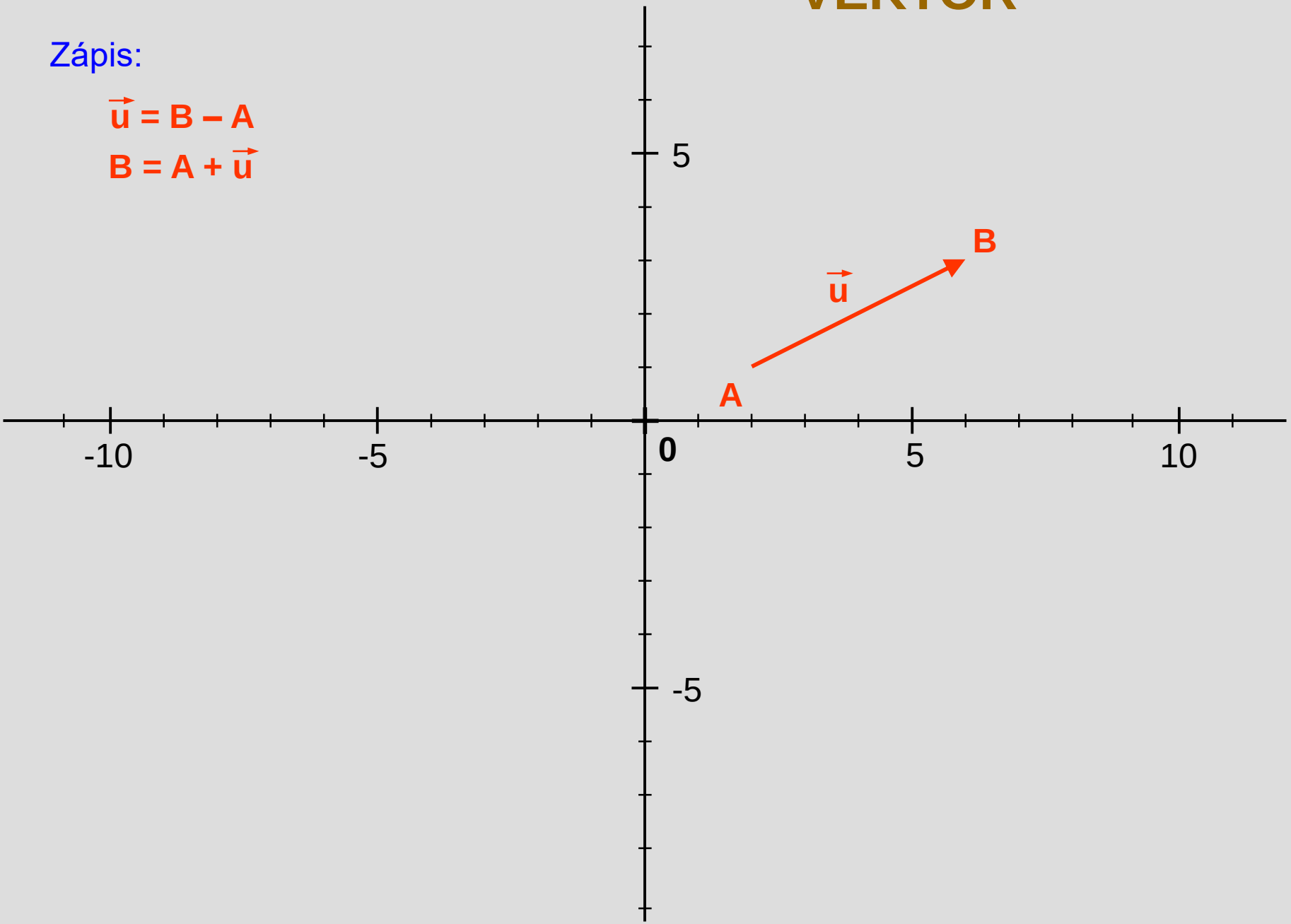


VEKTOR

Zápis:

$\vec{u} = B - A$

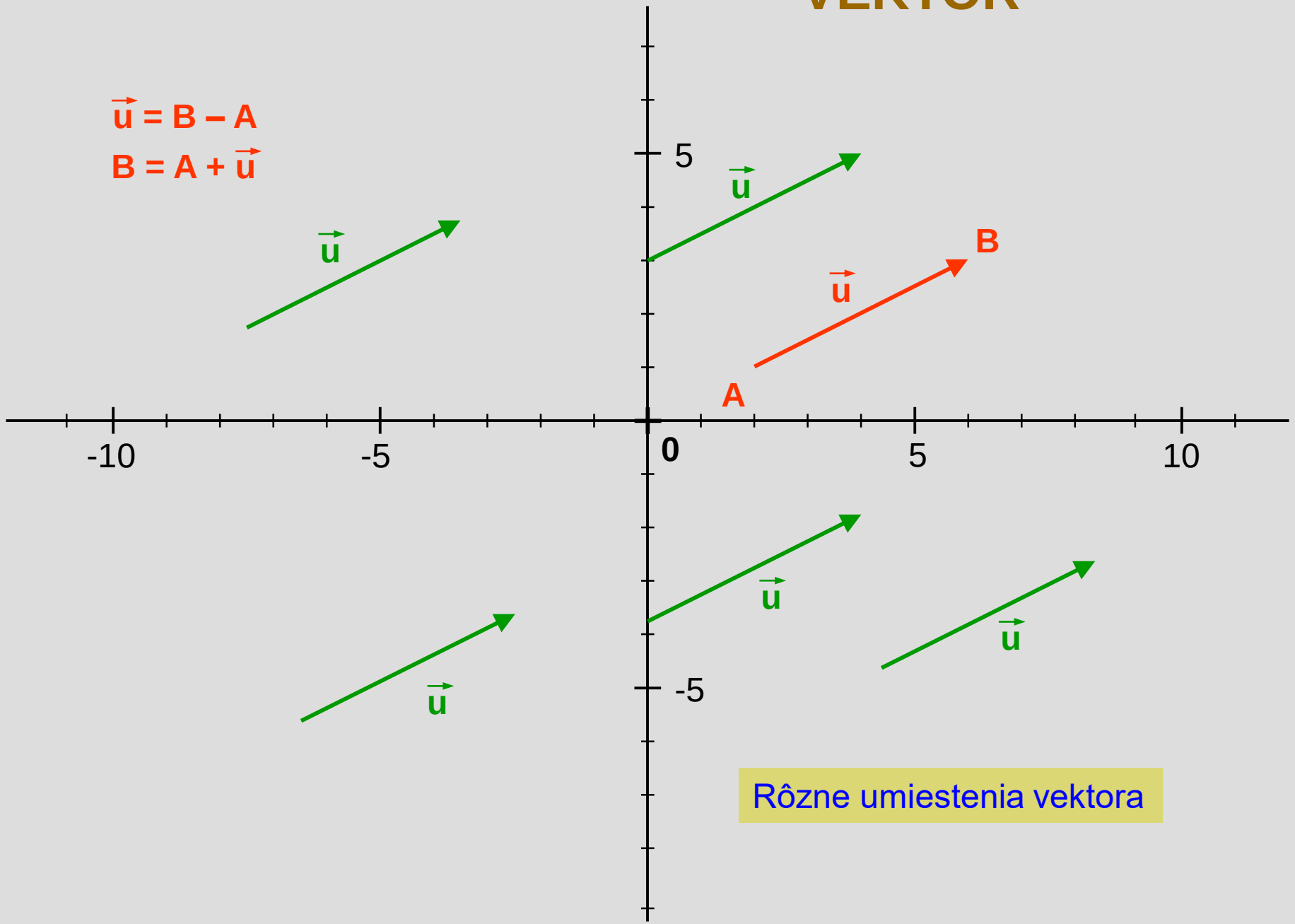
$B = A + \vec{u}$



VEKTOR

$\vec{u} = B - A$

$B = A + \vec{u}$

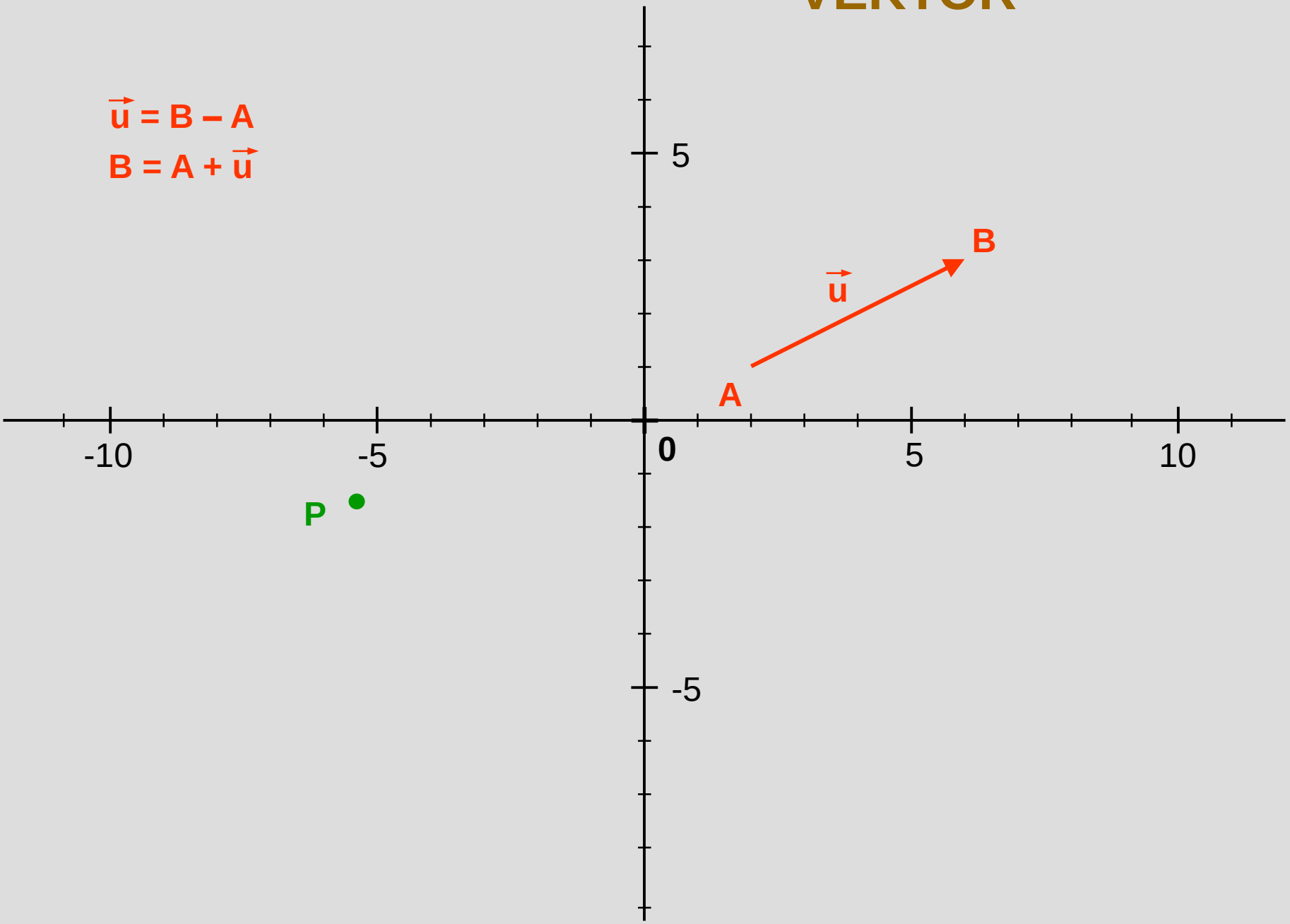


Rôzne umiestenia vektora

VEKTOR

$\vec{u} = B - A$

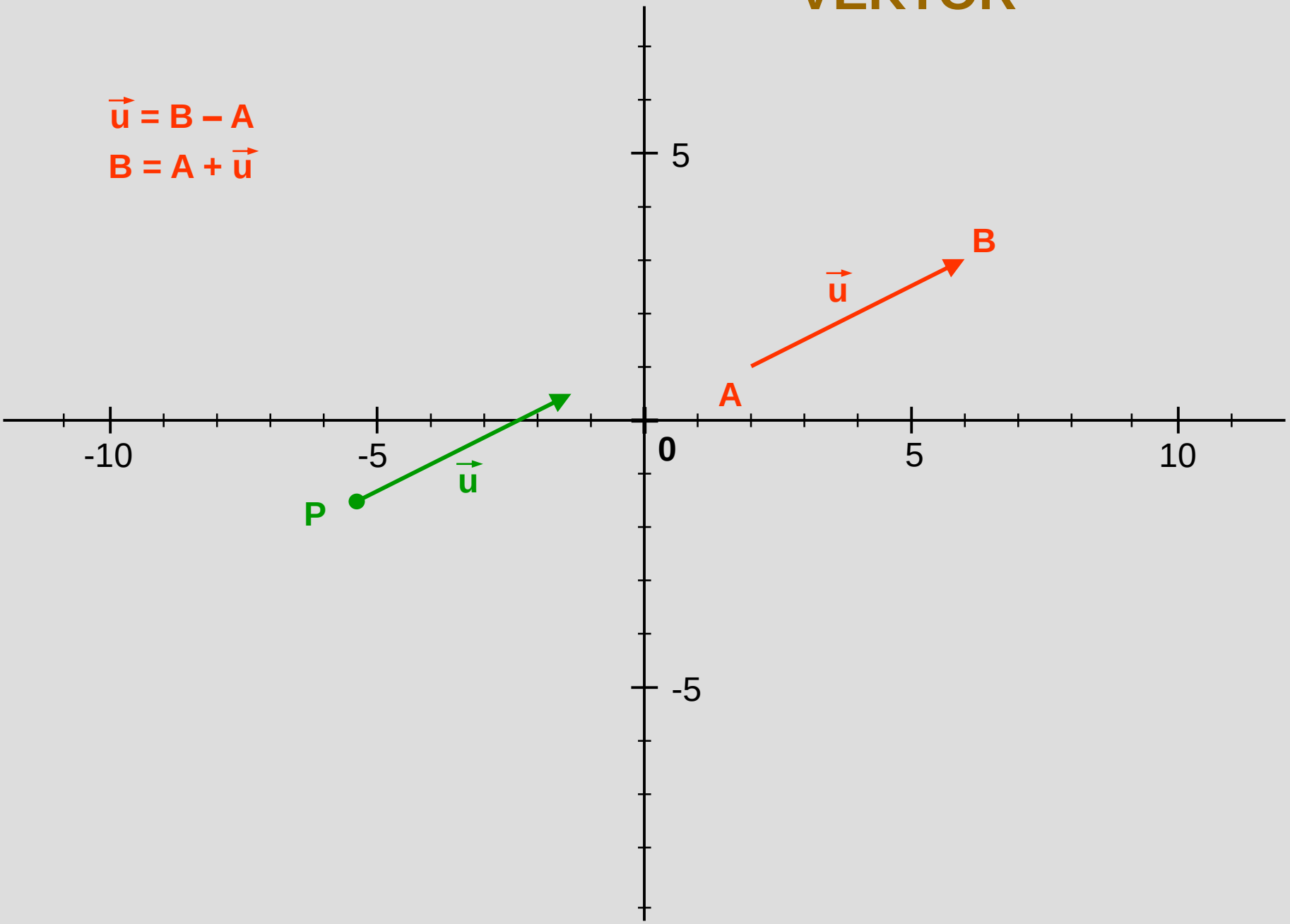
$B = A + \vec{u}$



VEKTOR

$\vec{u} = B - A$

$B = A + \vec{u}$



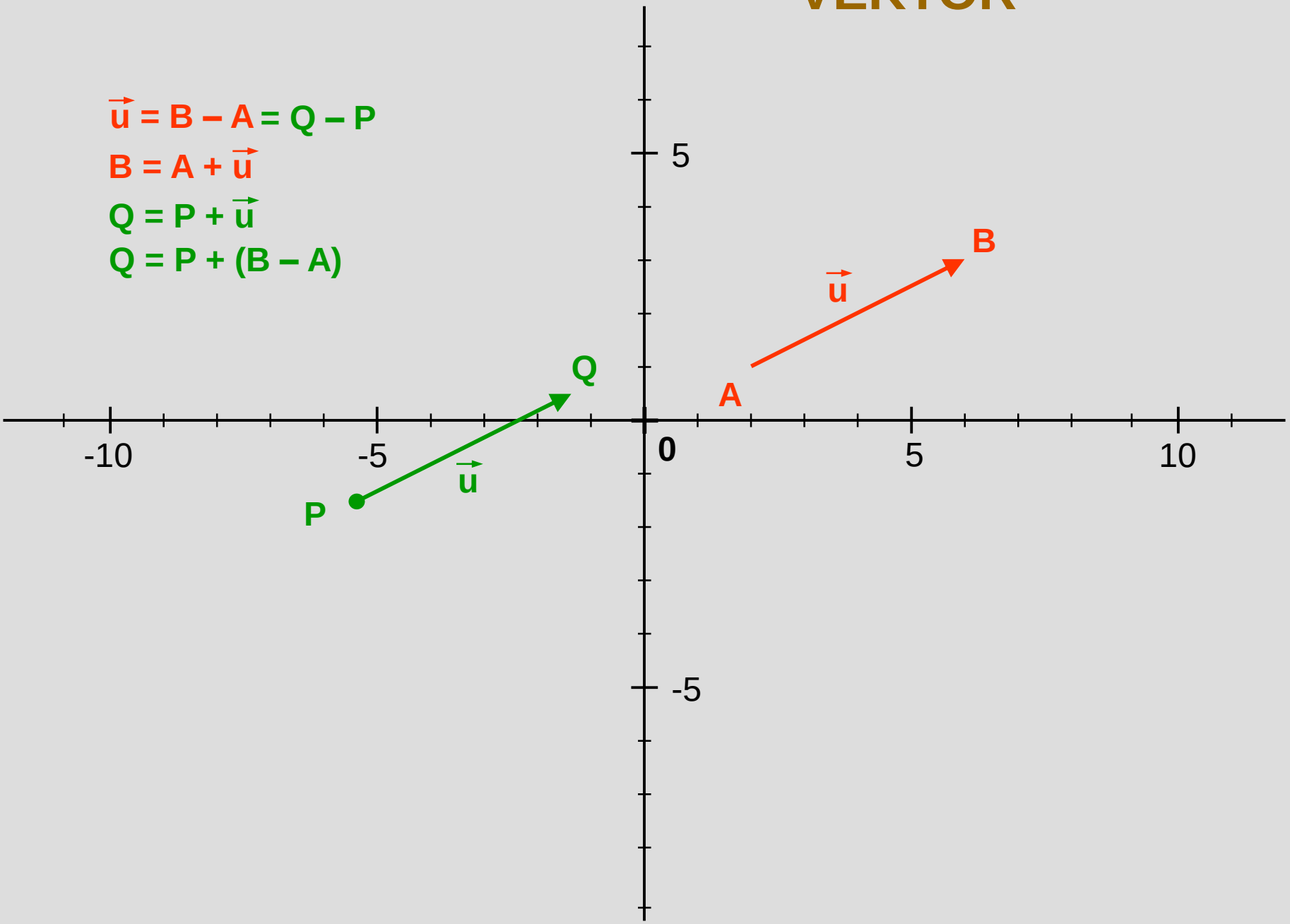
VEKTOR

$\vec{u} = B - A = Q - P$

$B = A + \vec{u}$

$Q = P + \vec{u}$

$Q = P + (B - A)$



VEKTOR

$\vec{u} = B - A = Q - P = L - K$

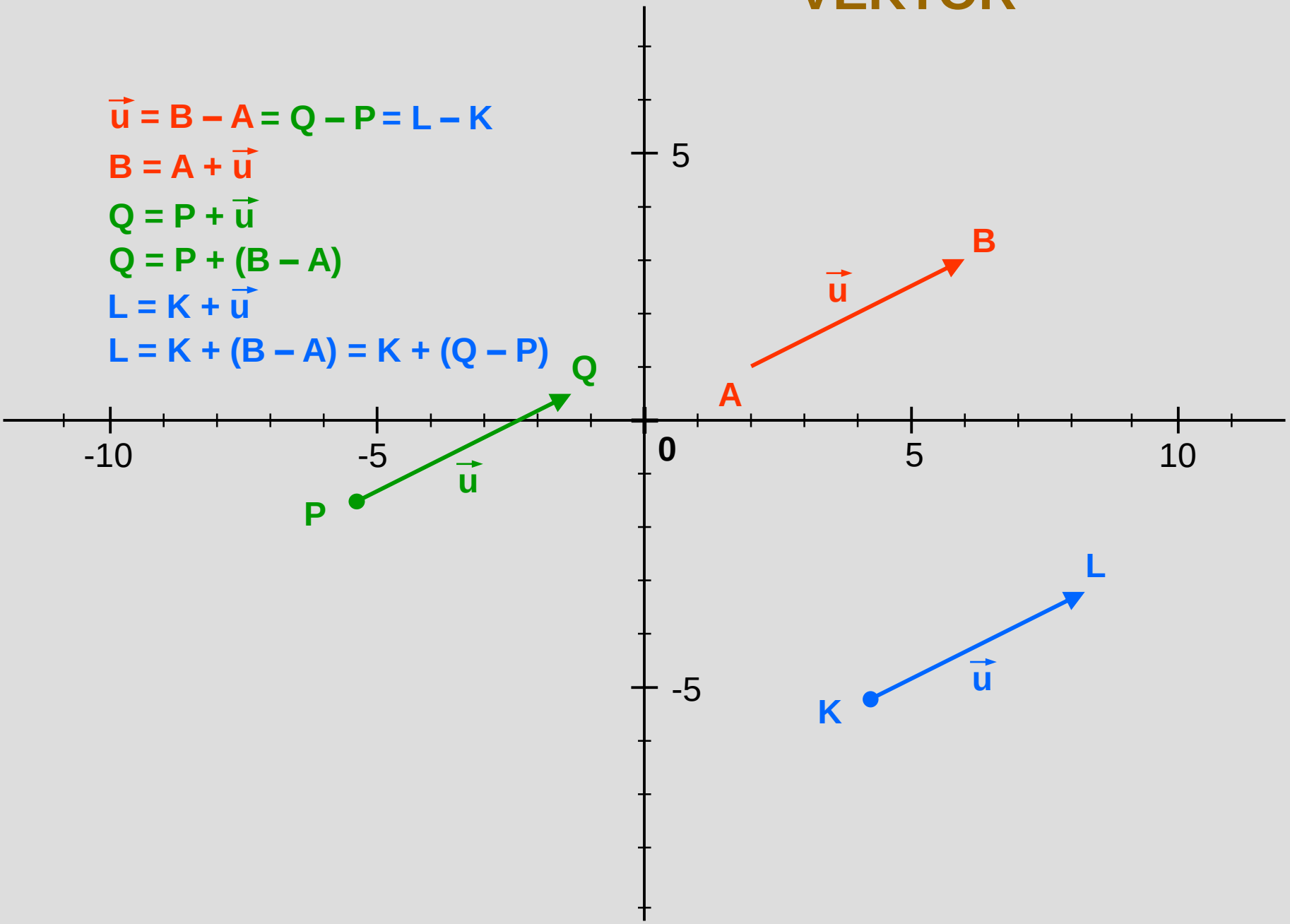
$B = A + \vec{u}$

$Q = P + \vec{u}$

$Q = P + (B - A)$

$L = K + \vec{u}$

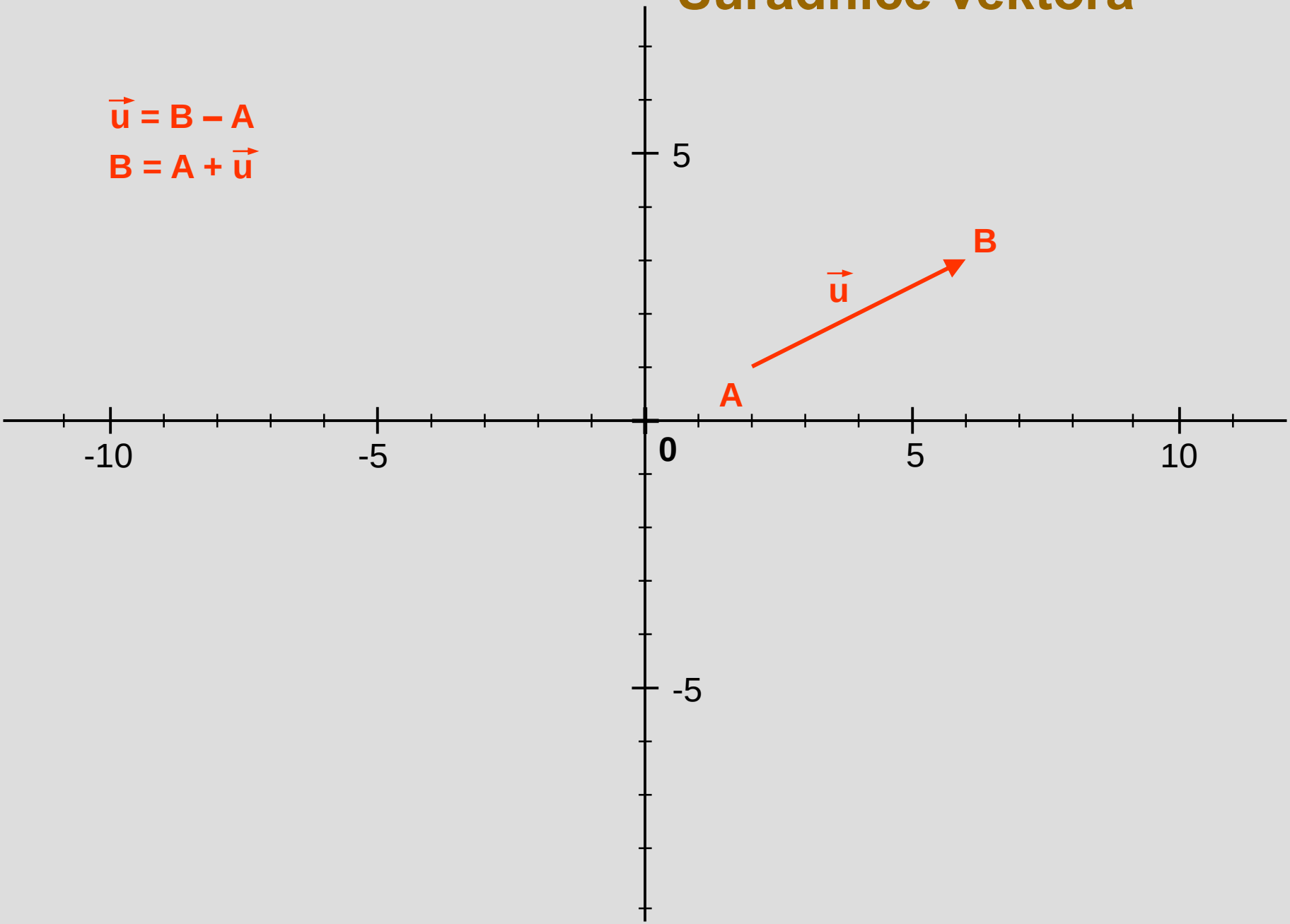
$L = K + (B - A) = K + (Q - P)$



Súradnice vektora

$\vec{u} = B - A$

$B = A + \vec{u}$



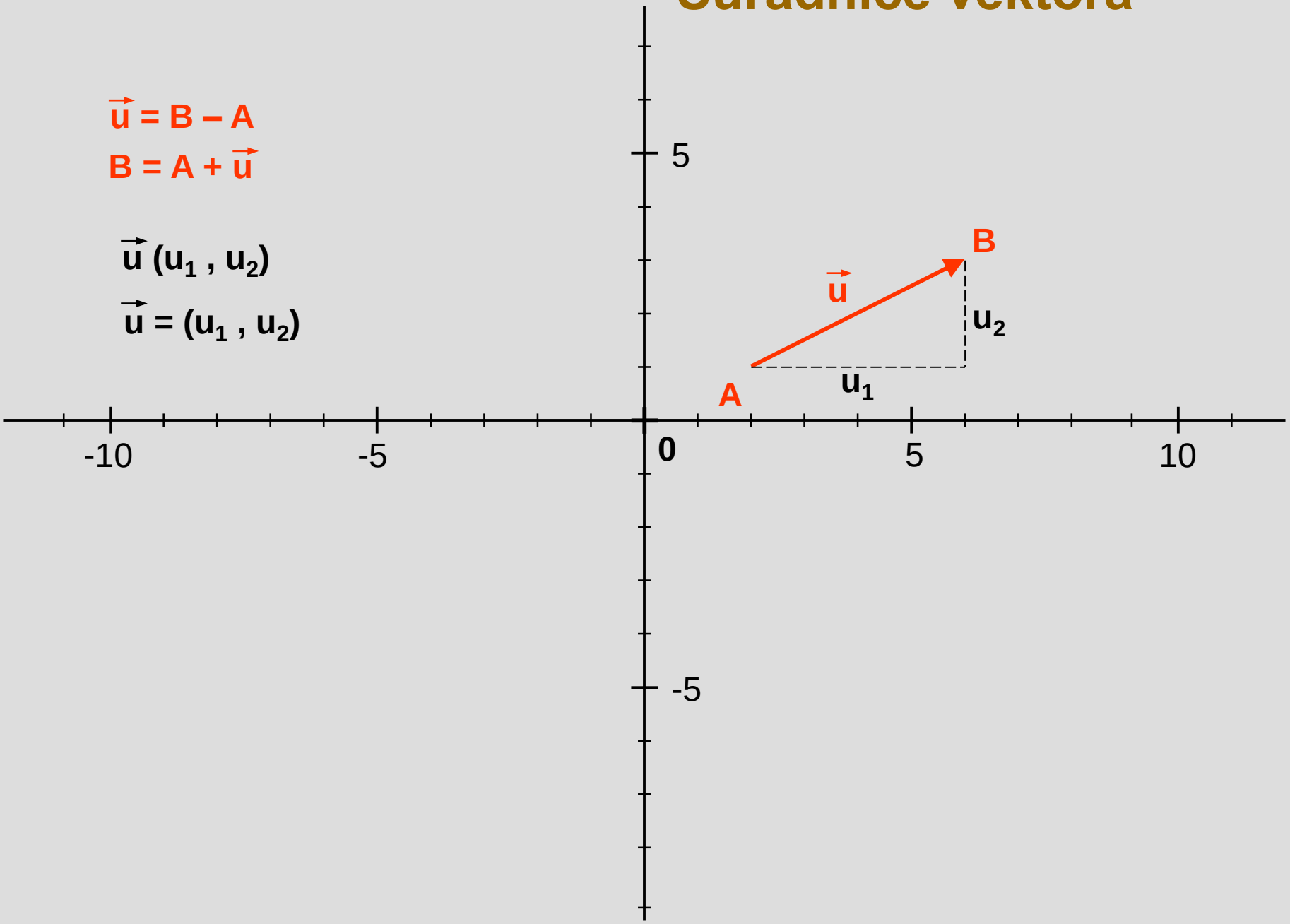
Súradnice vektora

$\vec{u} = B - A$

$B = A + \vec{u}$

$\vec{u}\,(u_1 , u_2)$

$\vec{u} = (u_1 , u_2)$



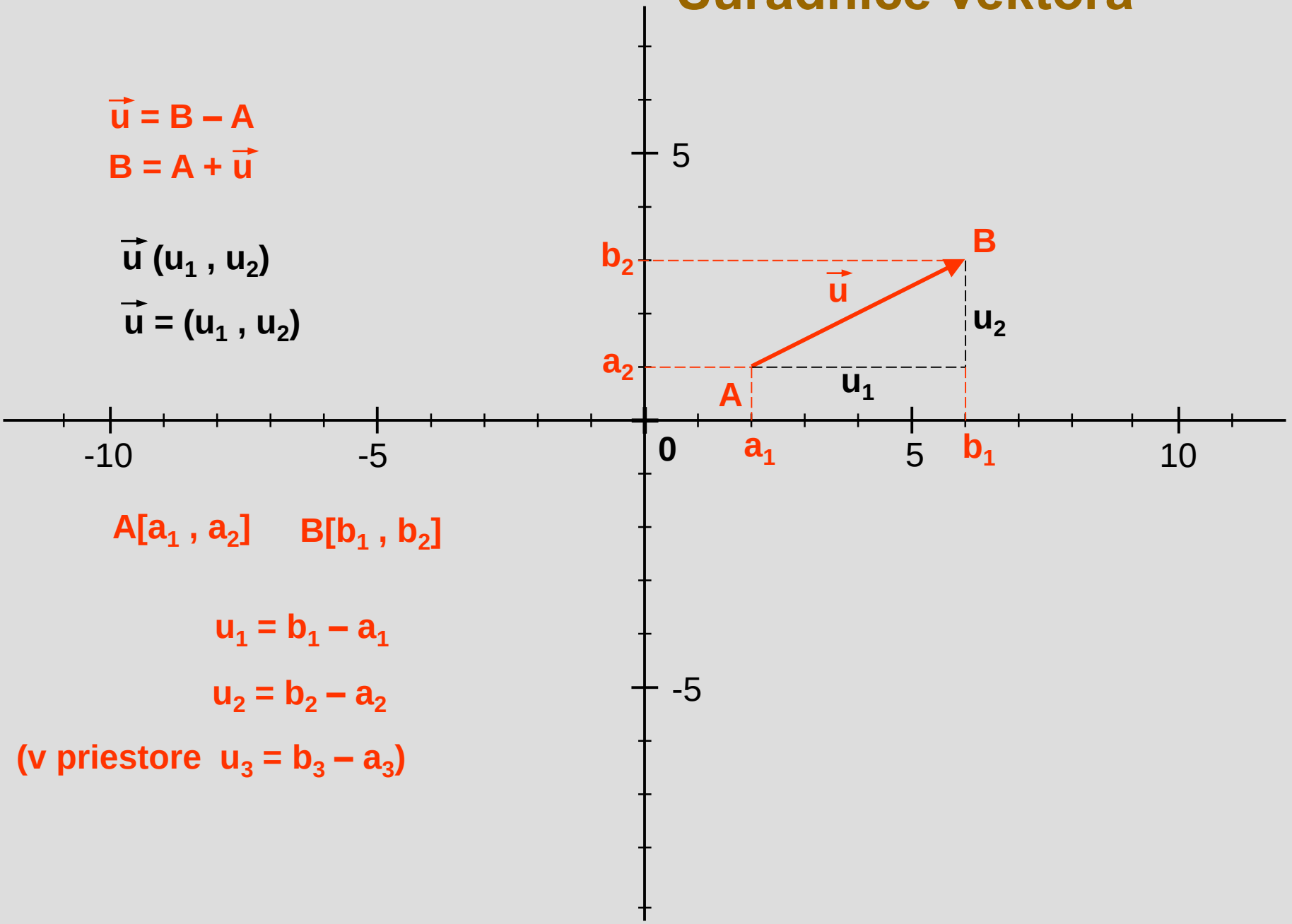
Súradnice vektora

$\vec{u} = B - A$

$B = A + \vec{u}$

$\vec{u}\,(u_1 , u_2)$

$\vec{u} = (u_1 , u_2)$



$A[a_1 , a_2]$ $B[b_1 , b_2]$

$u_1 = b_1 - a_1$

$u_2 = b_2 - a_2$

(v priestore $u_3 = b_3 - a_3$)

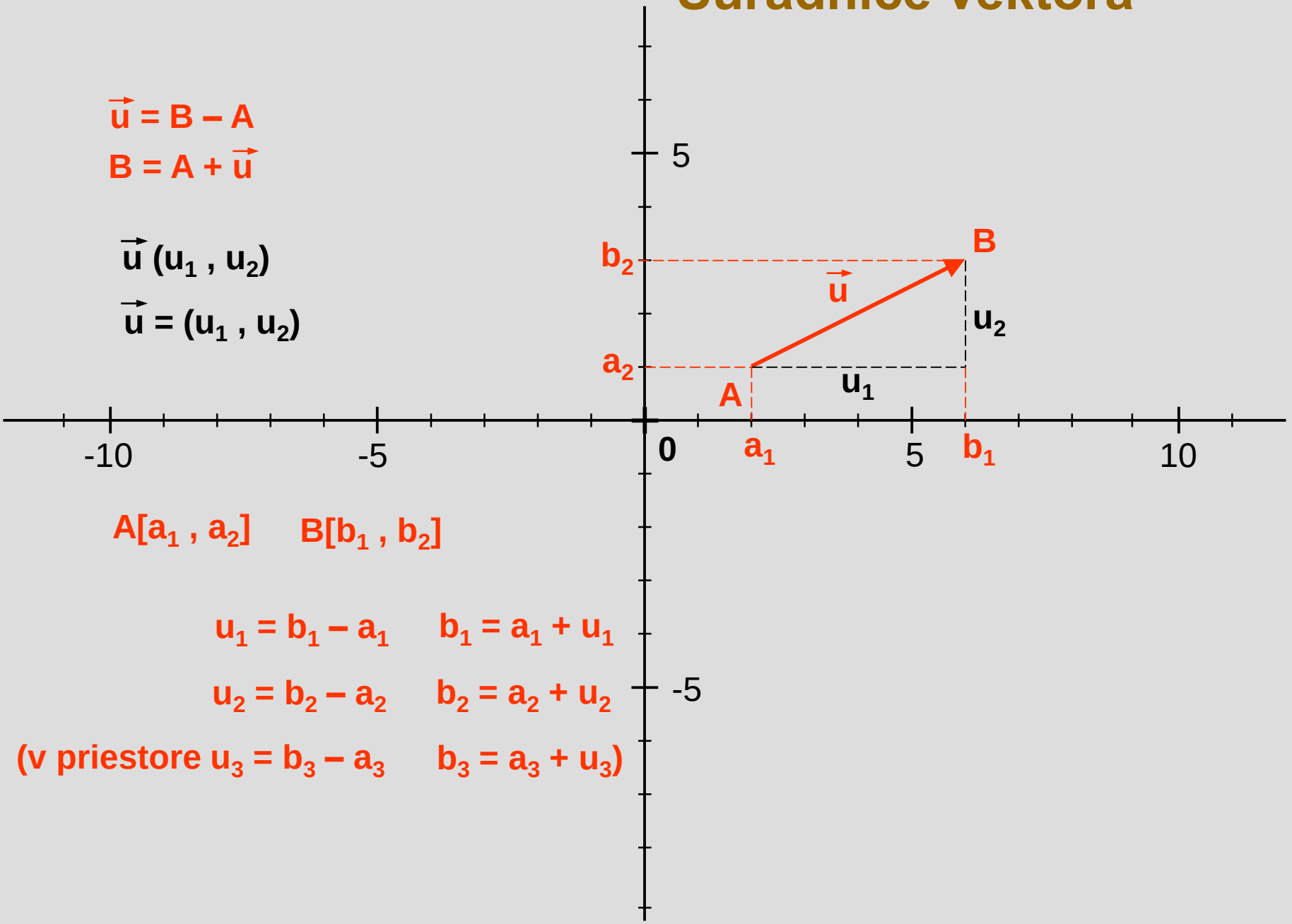
Súradnice vektora

$\vec{u} = B - A$

$B = A + \vec{u}$

$\vec{u}\,(u_1 , u_2)$

$\vec{u} = (u_1 , u_2)$



$A[a_1 , a_2]$ $B[b_1 , b_2]$

$u_1 = b_1 - a_1$ $b_1 = a_1 + u_1$

$u_2 = b_2 - a_2$ $b_2 = a_2 + u_2$

(v priestore $u_3 = b_3 - a_3$ $b_3 = a_3 + u_3$)

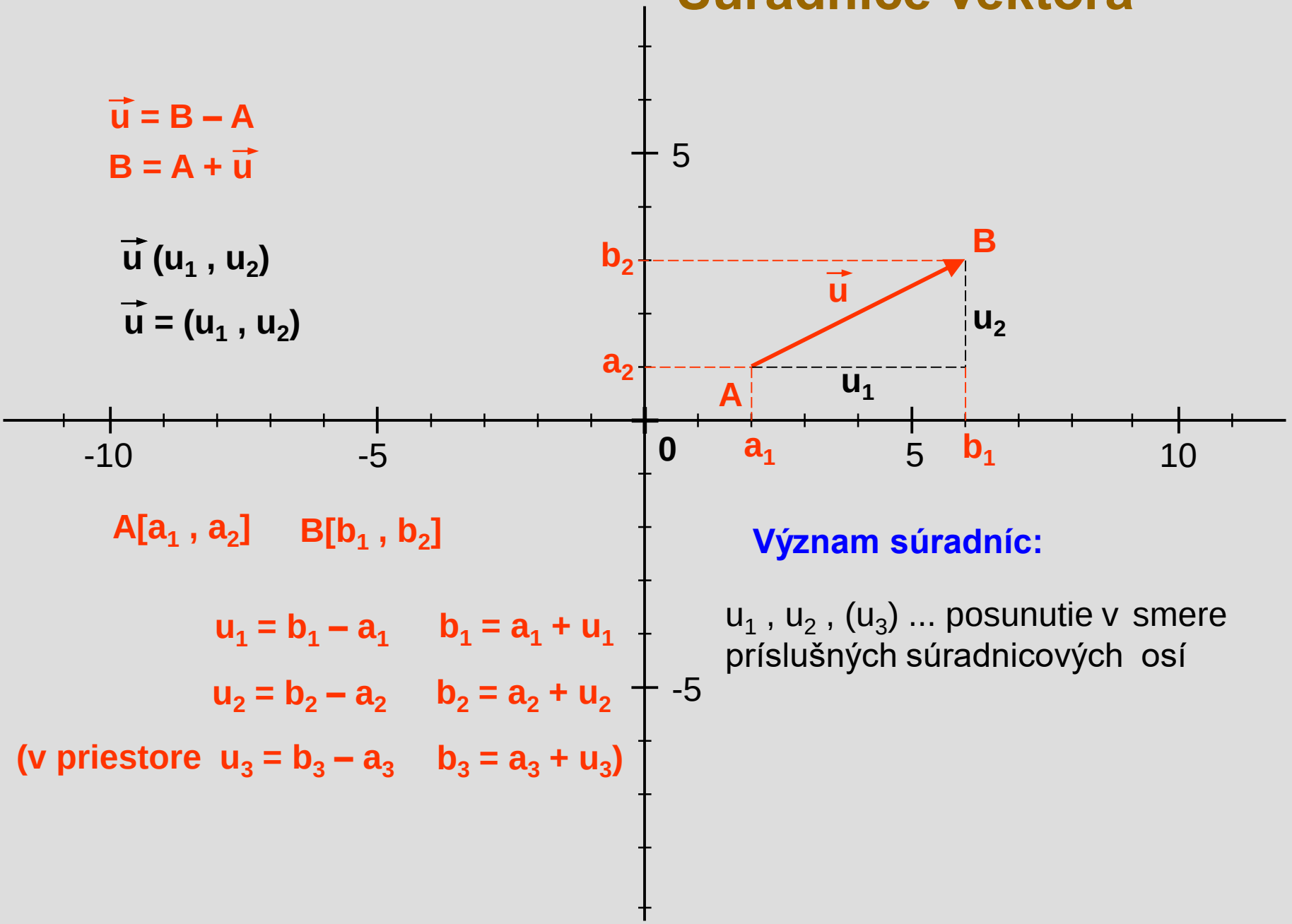
Súradnice vektora

$\vec{u} = B - A$

$B = A + \vec{u}$

$\vec{u}\,(u_1 , u_2)$

$\vec{u} = (u_1 , u_2)$



$A[a_1 , a_2]$ $B[b_1 , b_2]$

$u_1 = b_1 - a_1$ $b_1 = a_1 + u_1$

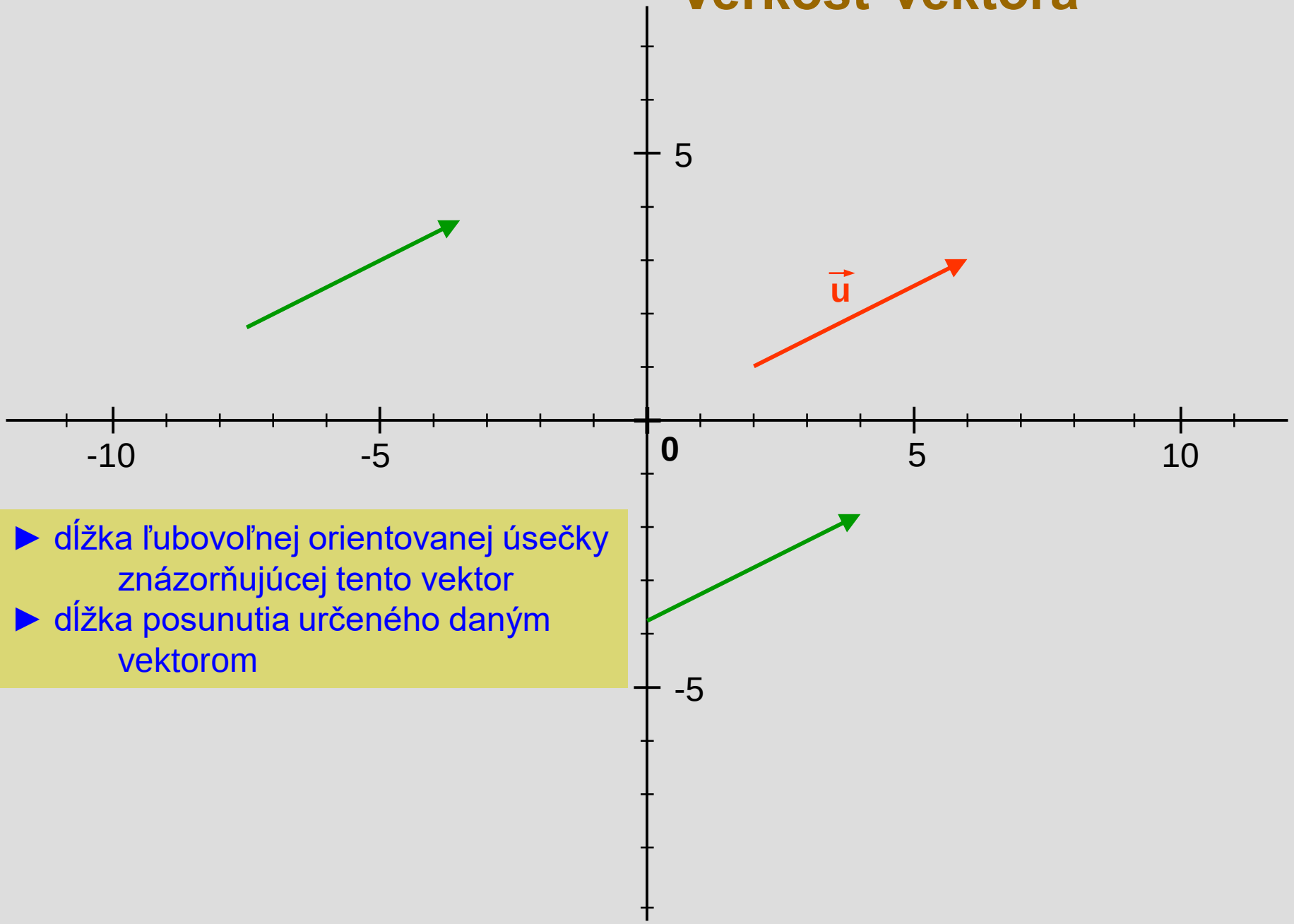
$u_2 = b_2 - a_2$ $b_2 = a_2 + u_2$

(v priestore $u_3 = b_3 - a_3$ $b_3 = a_3 + u_3$)

Význam súradníc:

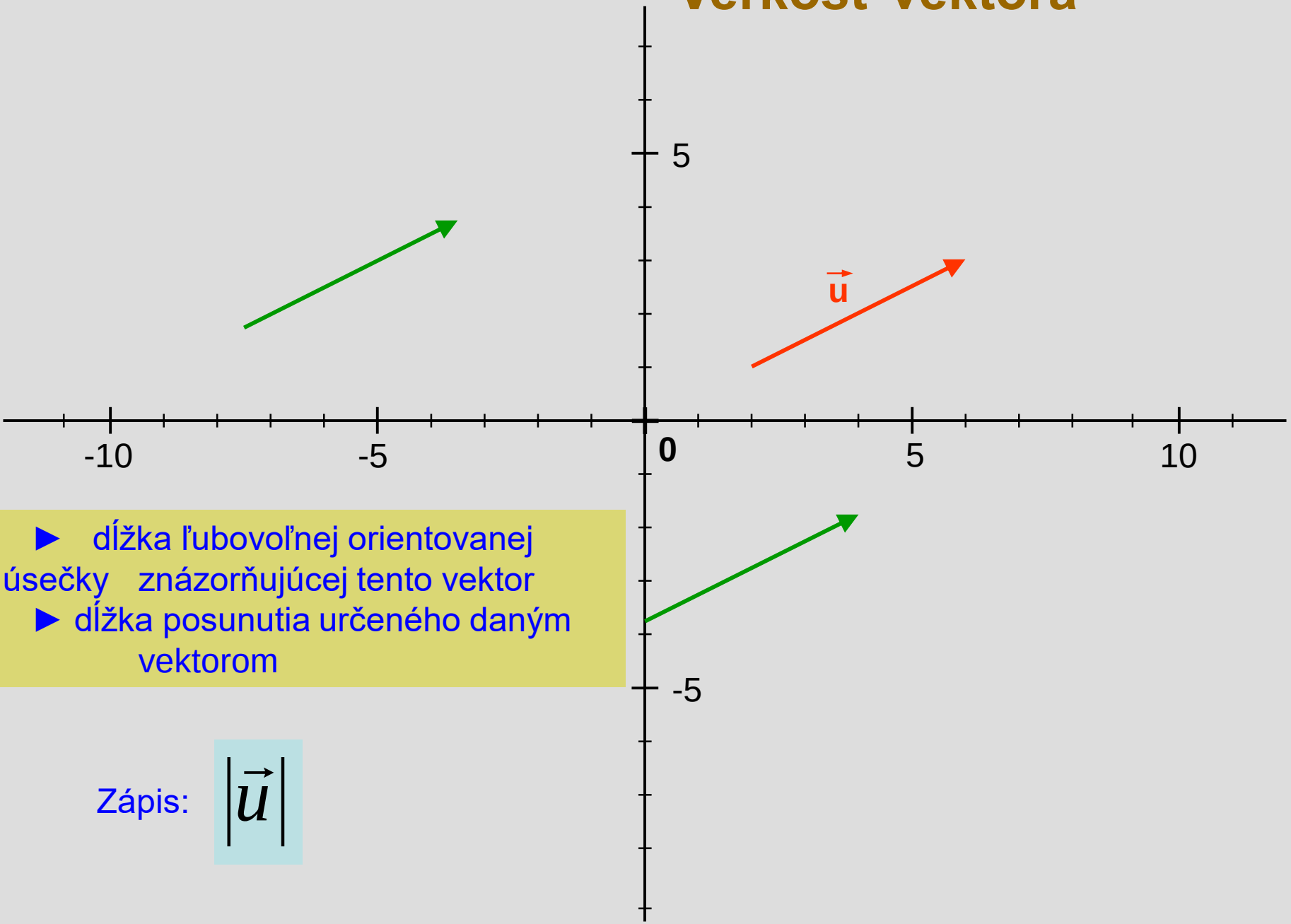
u_1 , u_2 , (u_3) ... posunutie v smere príslušných súradnicových osí

Veľkosť vektora



- dĺžka ľubovoľnej orientovanej úsečky znázorňujúcej tento vektor
- dĺžka posunutia určeného daným vektorom

Veľkosť vektora



► dĺžka ľubovoľnej orientovanej úsečky znázorňujúcej tento vektor

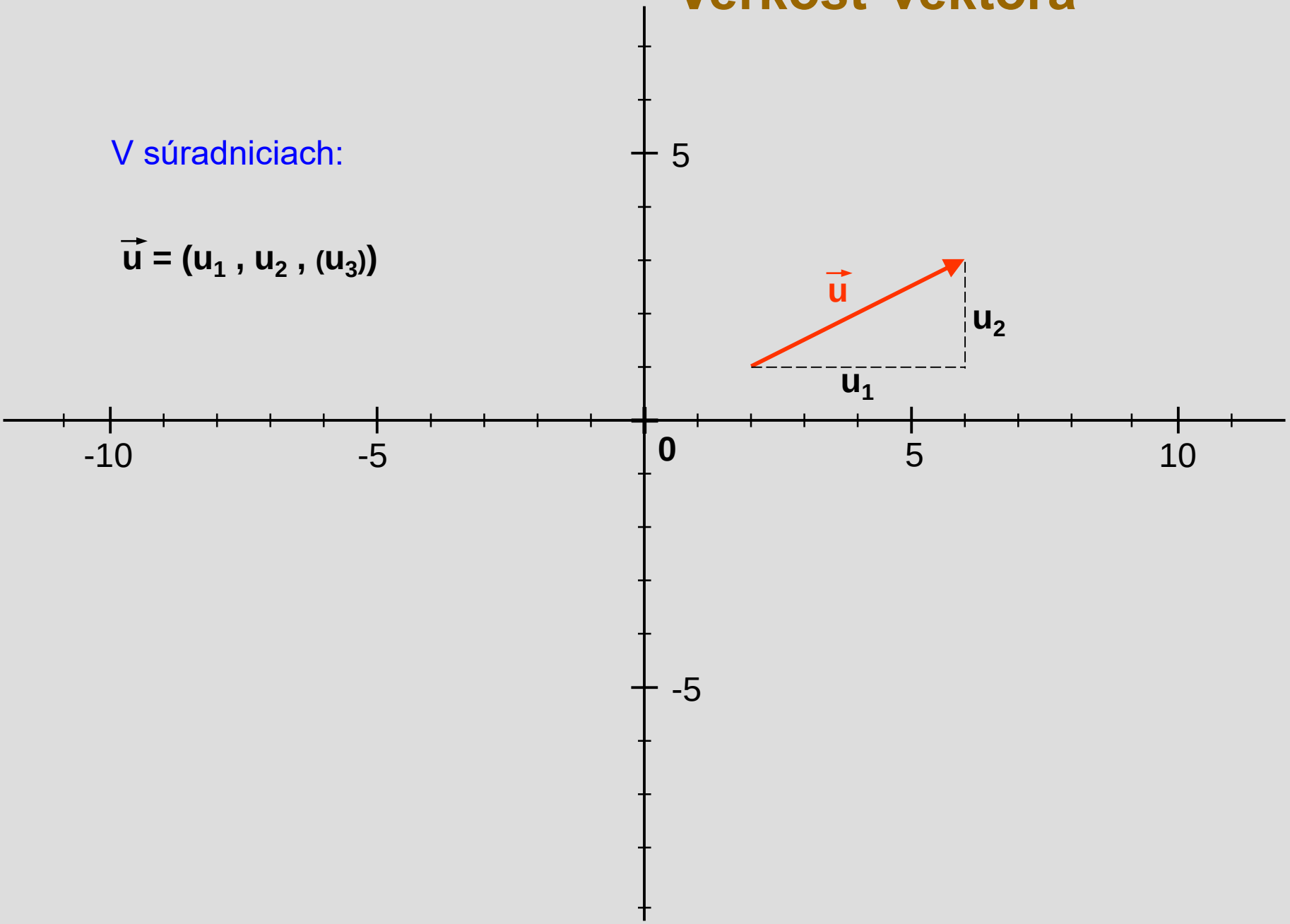
► dĺžka posunutia určeného daným vektorom

Zápis: $|\vec{u}|$

Veľkosť vektora

V súradniciach:

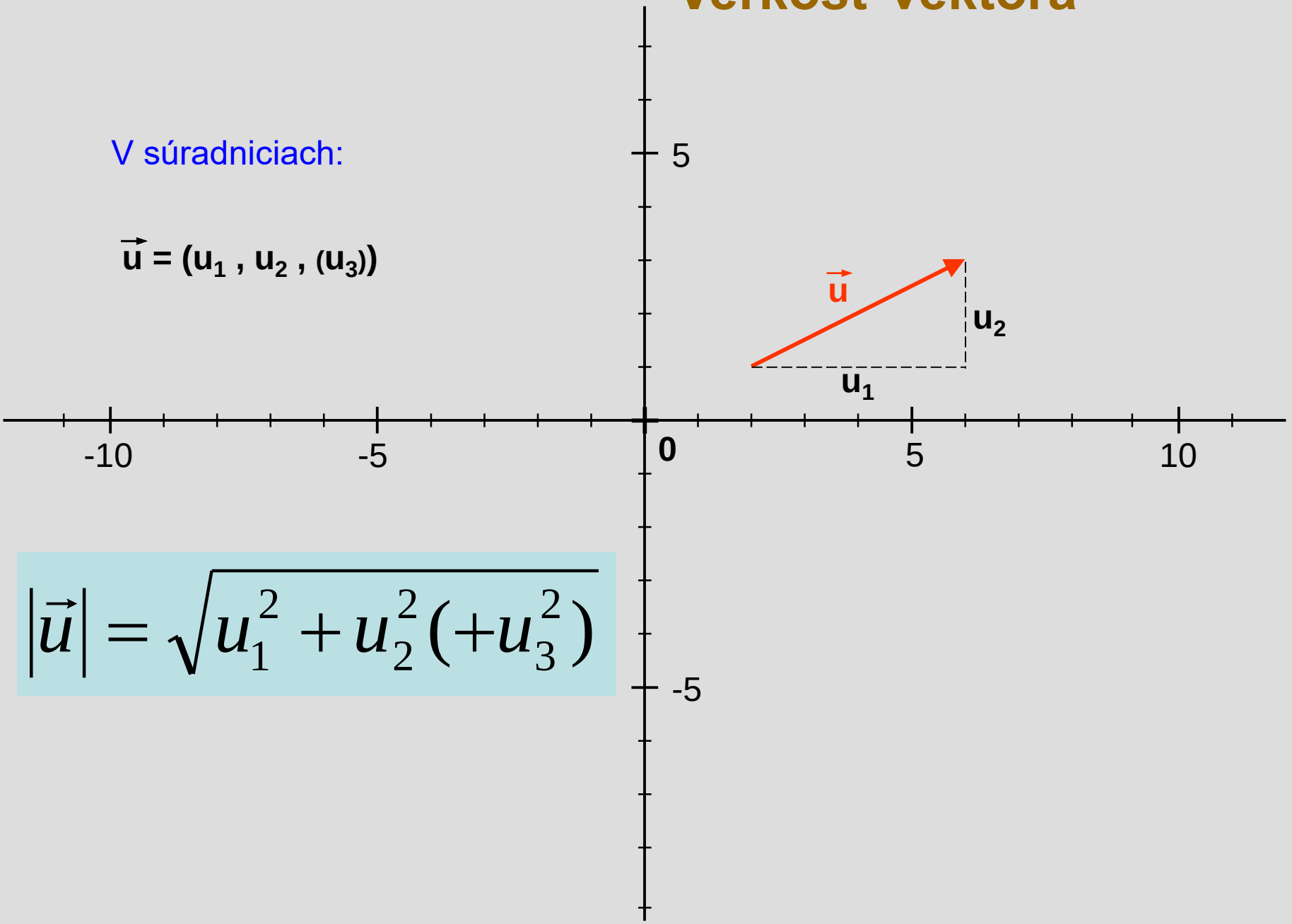
$\vec{u} = (u_1 , u_2 , (u_3))$



Veľkosť vektora

V súradniciach:

$\vec{u} = (u_1 , u_2 , (u_3))$



$$|\vec{u}| = \sqrt{u_1^2 + u_2^2 (+u_3^2)}$$