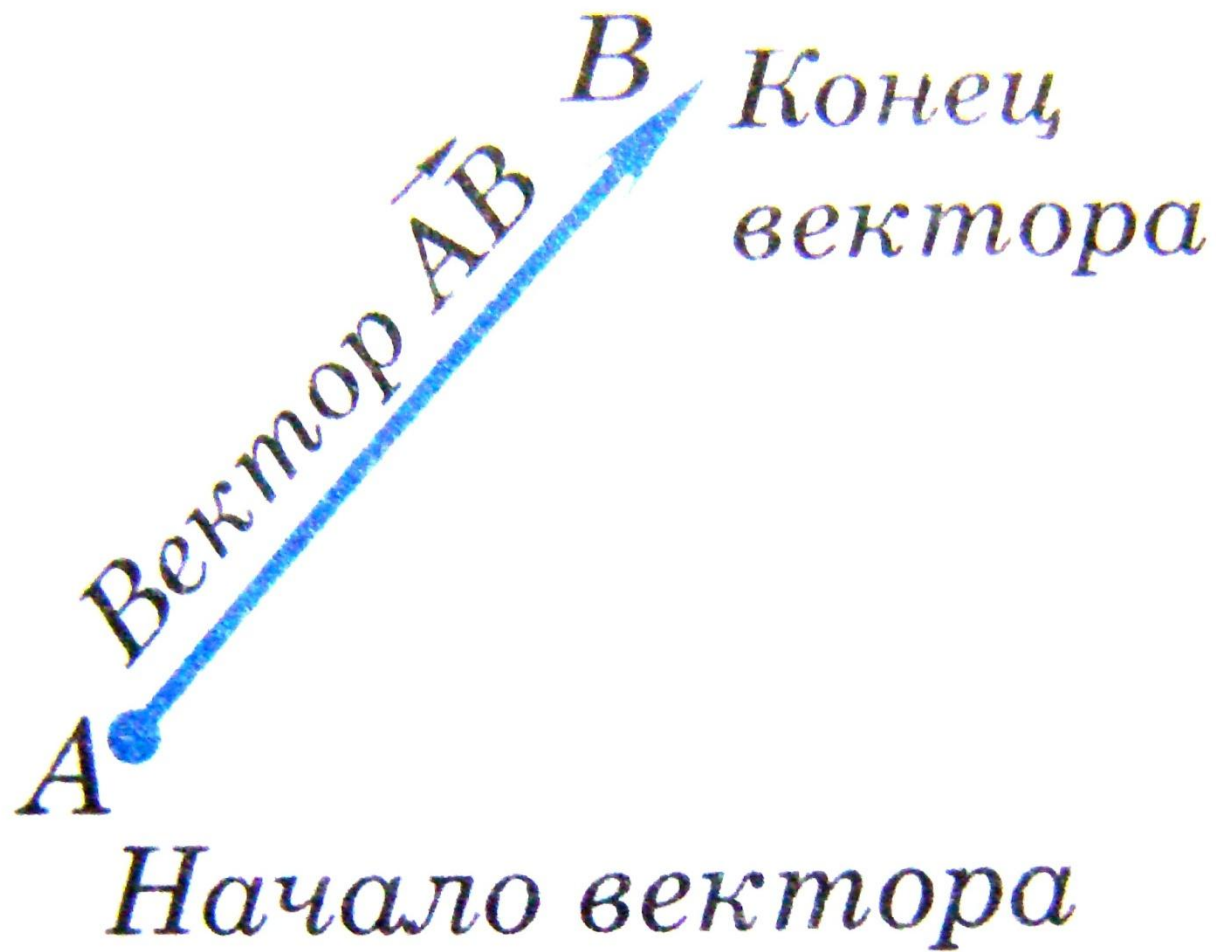


A collection of geometric shapes including a sphere, a cylinder, a cone, and a pyramid on a wooden surface. The shapes are rendered in a realistic style with shading and reflections. The text "ПОНЯТИЕ ВЕКТОР" is overlaid in a bold, orange-to-yellow gradient font.

ПОНЯТИЕ ВЕКТОР

Определение

Отрезок, для которого указано, какая из его граничных точек считается началом, а какая – концом, называется направленным отрезком или вектором

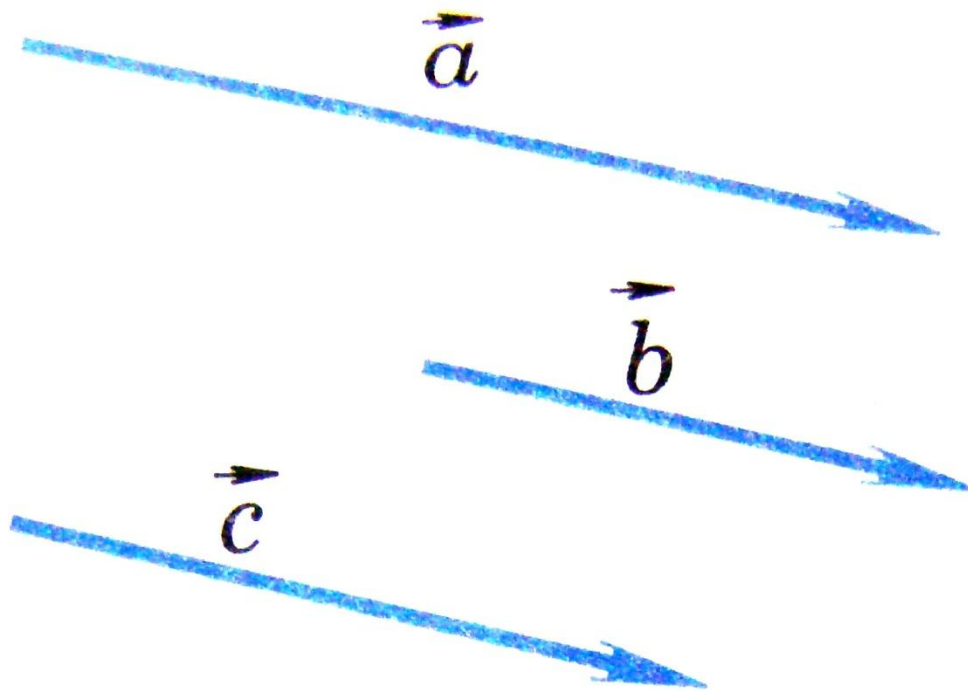


Равенство векторов

An abstract geometric composition featuring various 3D shapes like spheres, cylinders, and cones, arranged on a shelf against a textured background. The shapes are rendered in shades of gray and white, creating a sense of depth and form. The overall aesthetic is clean and modern, with a focus on geometric forms and light and shadow.

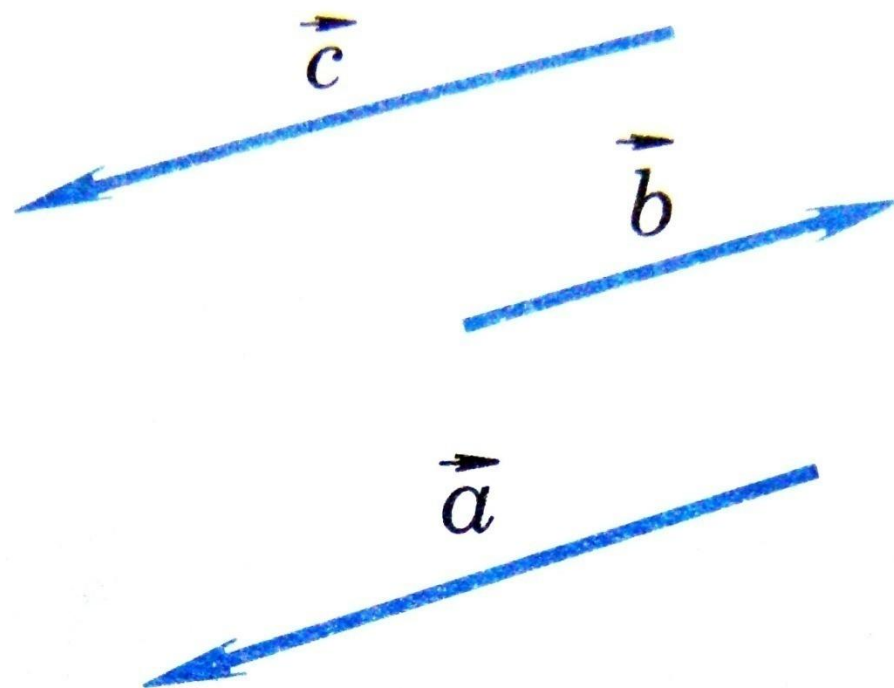
Определение

Векторы называются равными, если они сонаправлены и их длины равны.



Если $\vec{a} \uparrow\uparrow \vec{c}$, $\vec{b} \uparrow\uparrow \vec{c}$
($\vec{c} \neq \vec{0}$), то $\vec{a} \uparrow\uparrow \vec{b}$

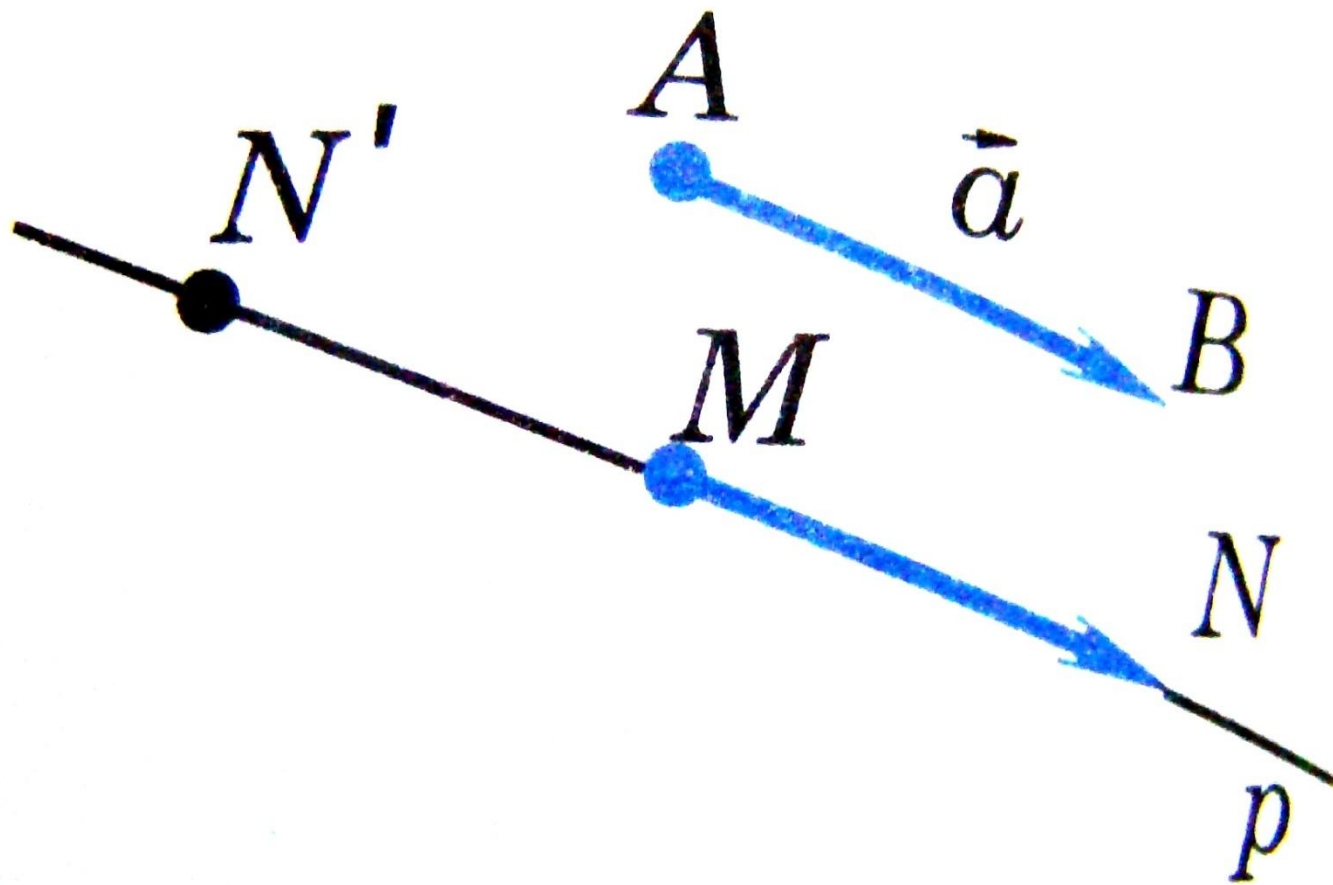
a)



Если $\vec{a} \uparrow \uparrow \vec{c}$, $\vec{b} \uparrow \downarrow \vec{c}$,

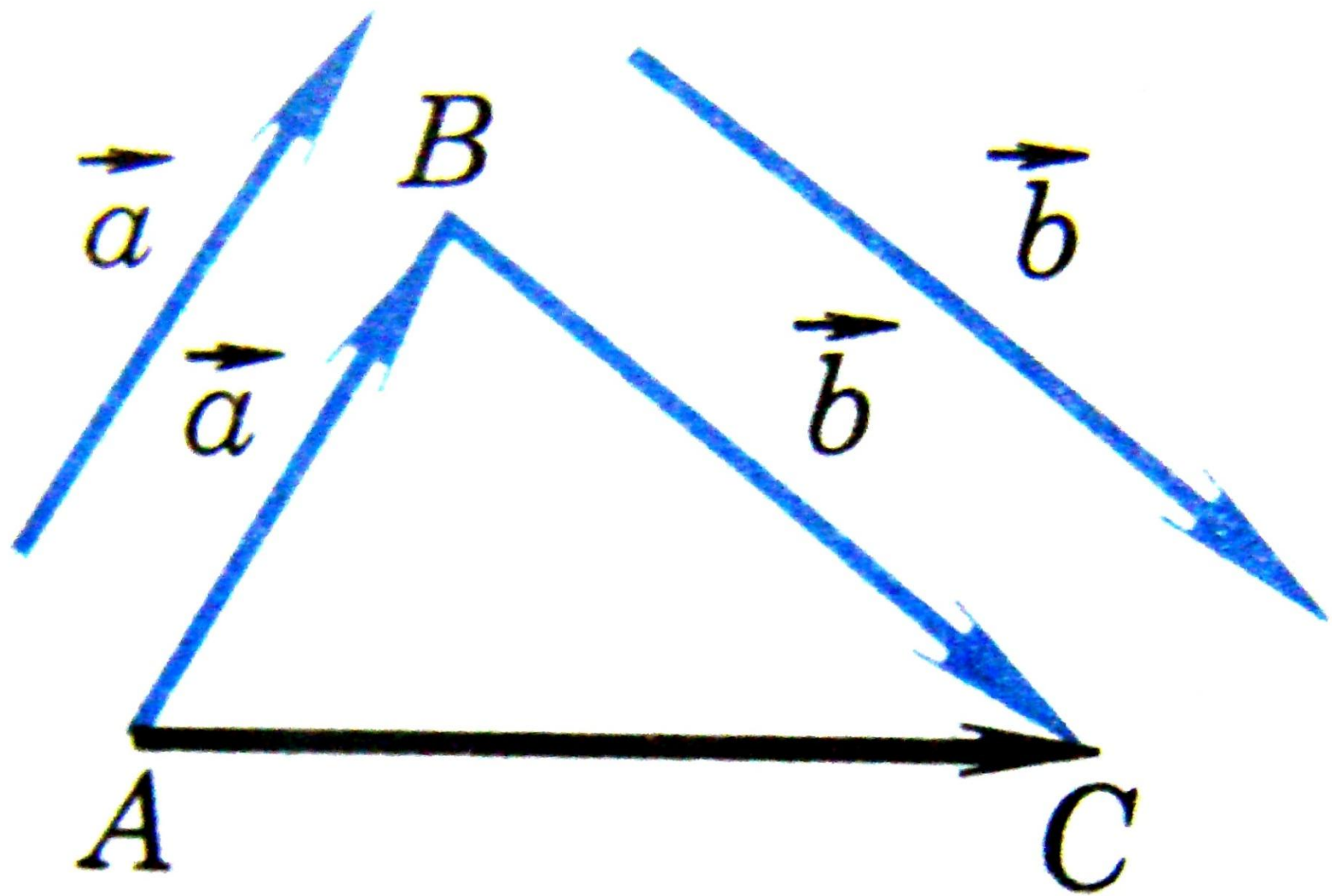
то $\vec{a} \uparrow \downarrow \vec{b}$

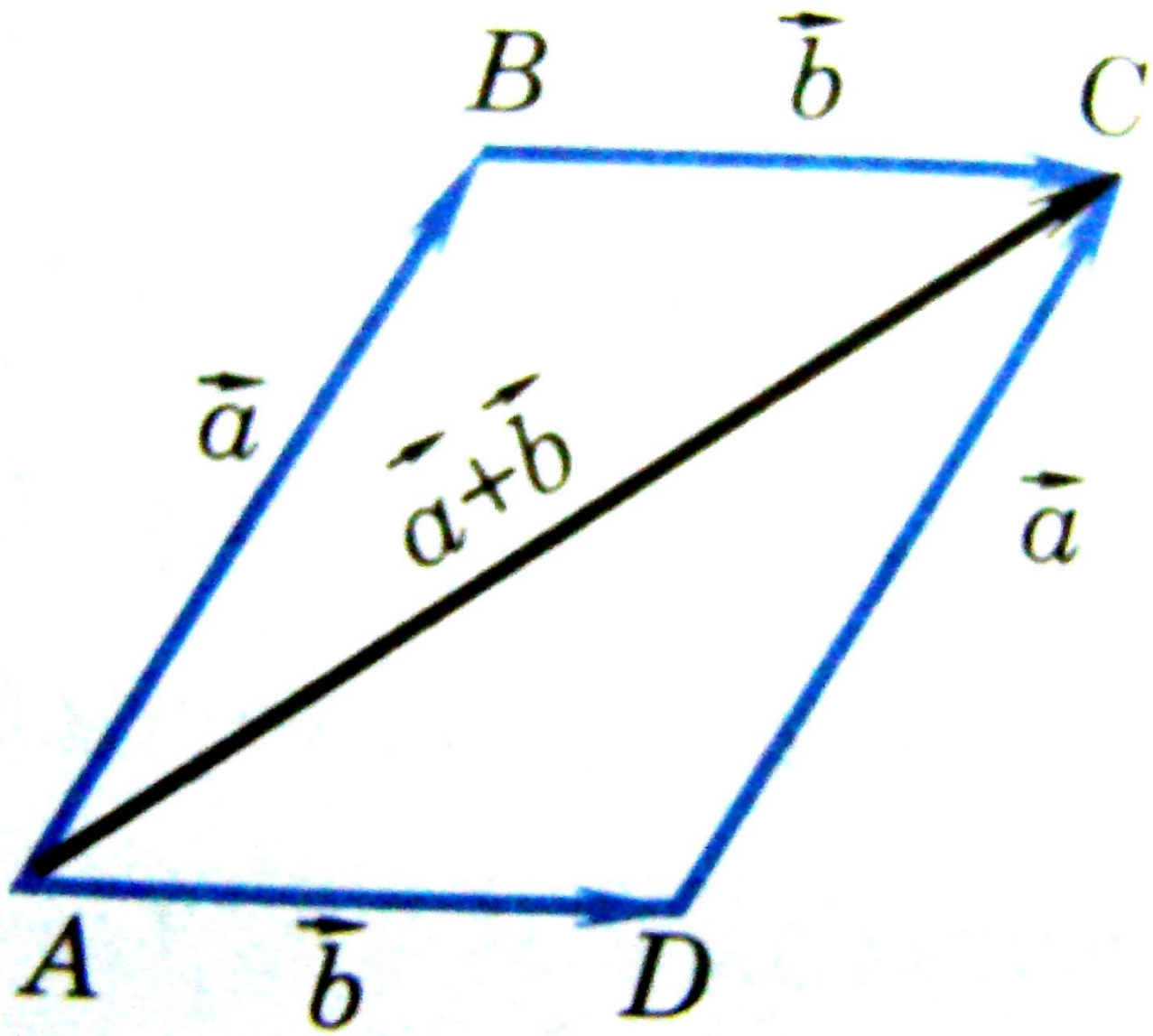
в)

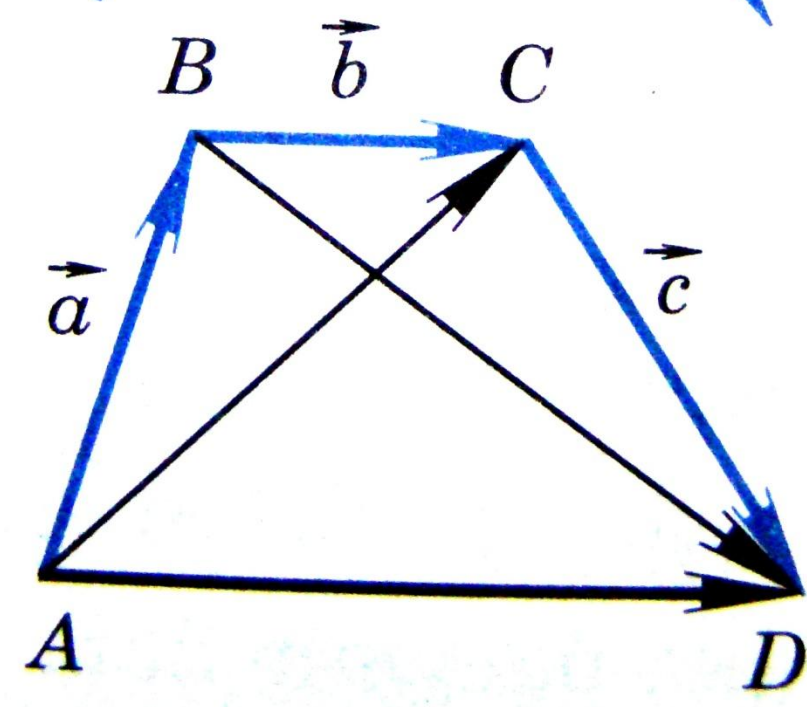
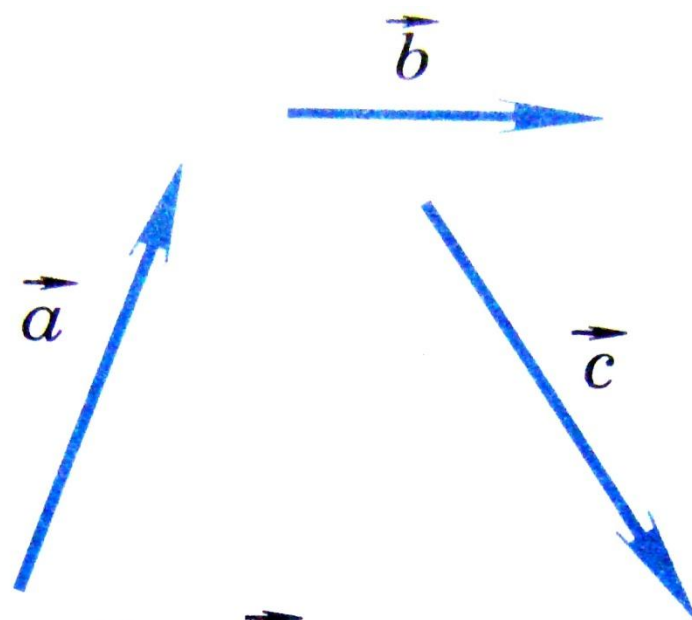


Сумма двух векторов



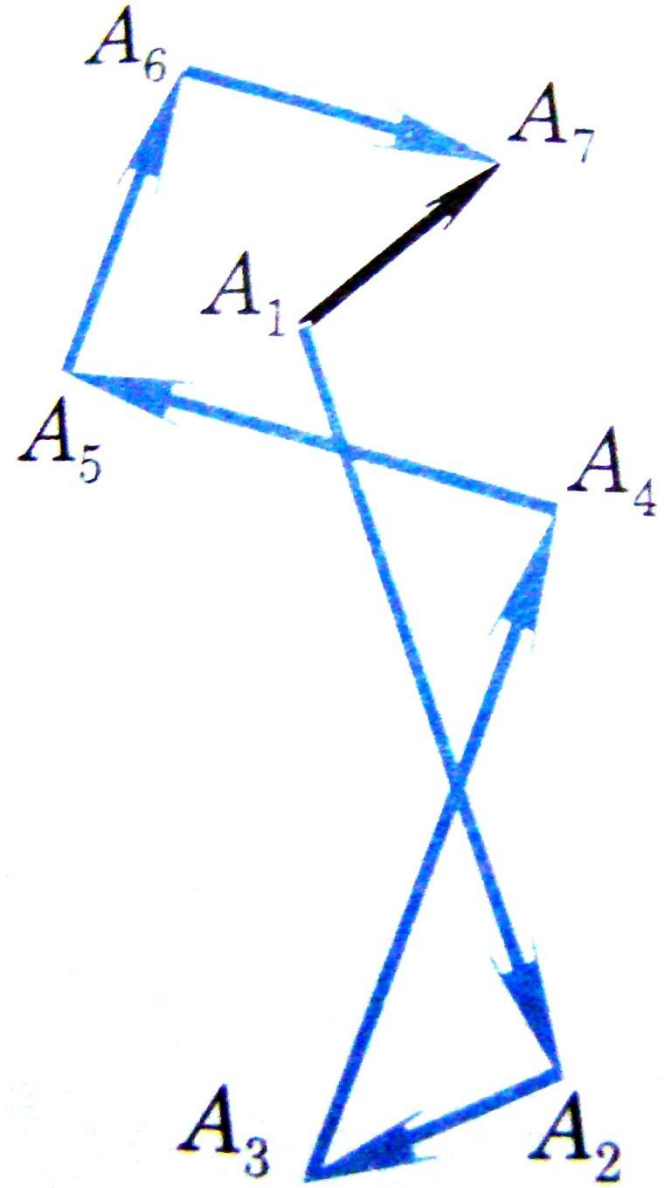




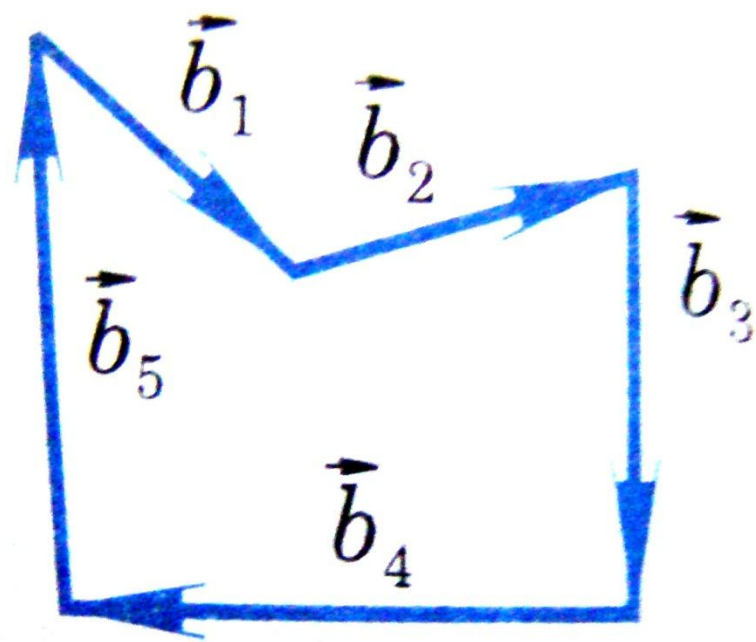


Сумма нескольких векторов

A pencil sharpener is shown in a grayscale, textured style. Inside the sharpener, several geometric shapes are visible: a sphere, a cylinder, a rectangular prism, and a cone. The text 'Сумма нескольких векторов' is overlaid in a bold, orange font across the center of the image.



a)



$$\vec{b}_1 + \vec{b}_2 + \vec{b}_3 + \vec{b}_4 + \vec{b}_5 = \vec{0}$$

b)

A collection of 3D geometric shapes including a sphere, a cylinder, a cone, and a pyramid on a wooden shelf. The shapes are rendered in a light, textured style. The text "Вычитание векторов" is overlaid in a large, bold, orange font across the center of the image.

Вычитание векторов

Теорема

Для любых векторов a и b справедливо равенство $a - b = a + (-b)$.

