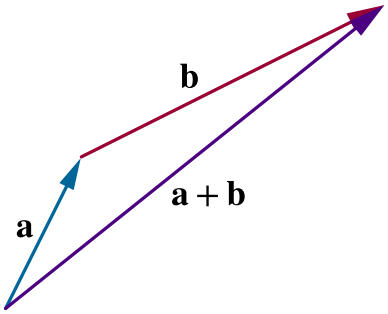
Vector addition

To *add vectors* given in component form, we add each component separately. For instance,

$$\begin{pmatrix}1\\2\end{pmatrix}+\begin{pmatrix}4\\3\end{pmatrix}=\begin{pmatrix}1+4\\2+3\end{pmatrix}=\begin{pmatrix}5\\5\end{pmatrix}.$$

Graphically, this is equivalent to taking the lines representing each vector and placing them end to end.



Vector addition is commutative, meaning that

$$\mathbf{a}+\mathbf{b}=\mathbf{b}+\mathbf{a}.$$