

**Set**

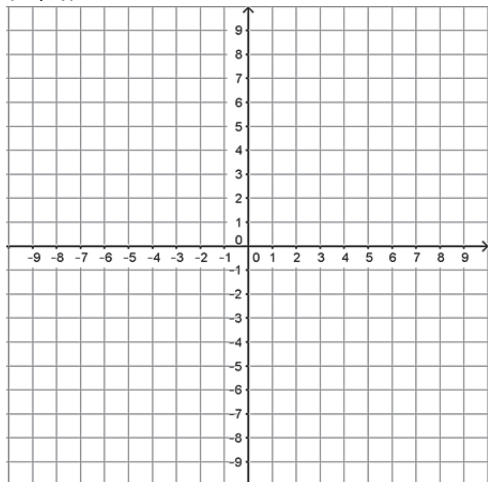
Topic: Adding vectors

Two vectors are described in component form in the following way:

$$\vec{v}: \langle -2, 3 \rangle \text{ and } \vec{w}: \langle 3, 4 \rangle$$

On the grids below, create vector diagrams to show the following. Find the magnitude and component form of the resultant vector.

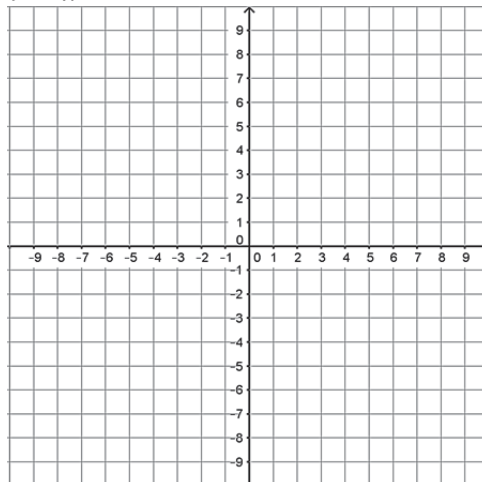
4.  $\vec{v} + \vec{w} =$



magnitude:

component form:

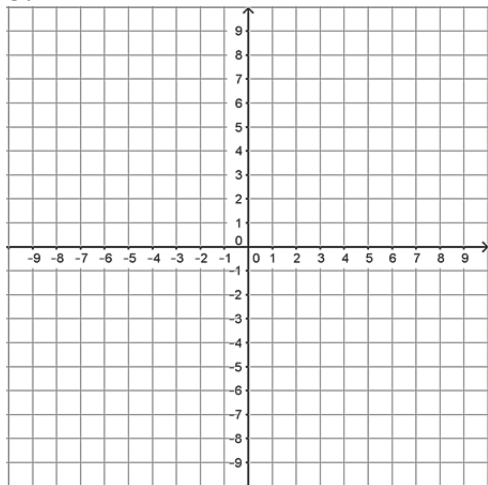
5.  $\vec{v} - \vec{w} =$



magnitude:

component form:

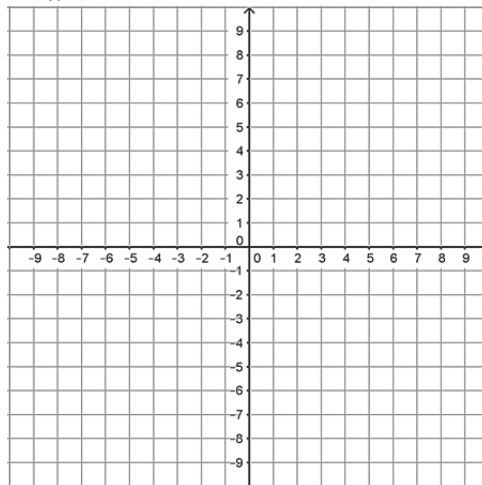
6.  $3\vec{v} =$



magnitude:

component form:

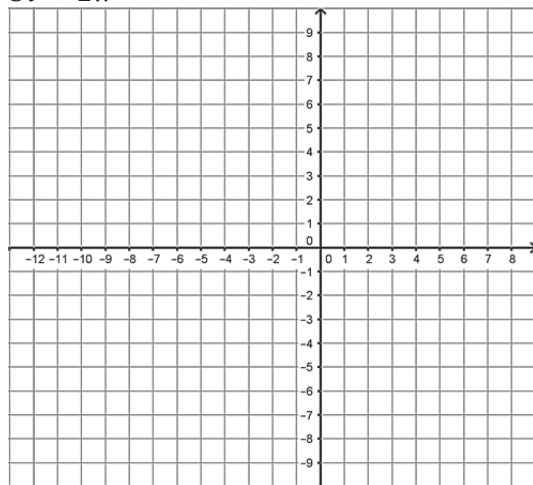
7.  $-2\vec{w} =$



magnitude:

component form:

8.  $3\vec{v} - 2\vec{w} =$



magnitude:

component form:

### Go

Topic: The arithmetic of matrices

$$A = \begin{bmatrix} 2 & -3 \\ -1 & 5 \end{bmatrix}, B = \begin{bmatrix} 2 & 5 \\ -3 & 2 \end{bmatrix}, \text{ and } C = \begin{bmatrix} 4 & 2 & -1 \\ 5 & 2 & 3 \end{bmatrix}$$

**Find the following sums, differences, or products. If the sum, difference, or product is undefined, explain why.**

10.  $A + B$

11.  $A + C$

12.  $2A - B$

13.  $A \cdot B$

14.  $B \cdot A$

15.  $A \cdot C$

16.  $C \cdot A$

9. Show how to find  $\vec{v} + \vec{w}$  using the parallelogram rule

