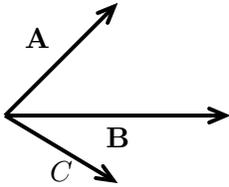
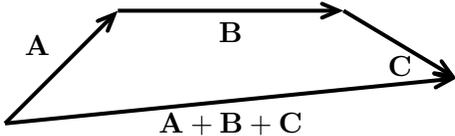


Vector addition

1. Find $A + B + C$.



Answer: Vectors are displacements: $A + B + C$ is the net displacement from following A then B then C .



2. a) Find $A + B + C$, where $A = \langle 1, 2 \rangle$, $B = \langle 1, 0 \rangle$, $C = \langle 2, -1 \rangle$.
b) Find $\langle 1, 2, 5 \rangle + \langle -2, 1, 5 \rangle$.

Answer: a) Algebraically vectors add componentwise so

$$A + B + C = \langle 1 + 1 + 2, 2 + 0 + -1 \rangle = \langle 4, 1 \rangle.$$

Remember $\langle 1, 2 \rangle$ is a shorthand for $\mathbf{i} + 2\mathbf{j}$. So another way to see this answer is that

$$A + B + C = (\mathbf{i} + 2\mathbf{j}) + \mathbf{i} + (2\mathbf{i} - \mathbf{j}) = 4\mathbf{i} + \mathbf{j}.$$

- b) $\langle 1, 2, 5 \rangle + \langle -2, 1, 5 \rangle = \langle -1, 3, 10 \rangle$.

Hopefully you found these examples very simple. Things will get more complicated soon. For now you should just make sure you become very comfortable with vector computation done both geometrically and algebraically.

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