

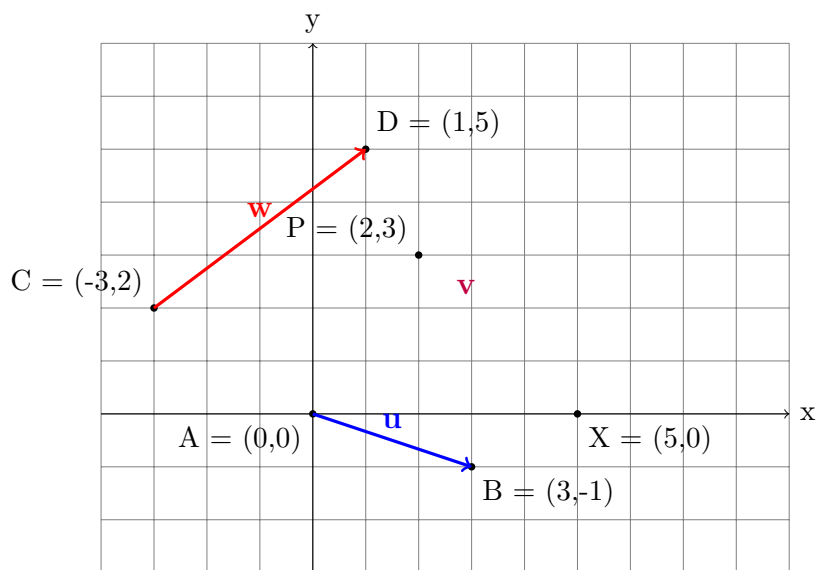
Vector Worksheet

Vector Representations

Use the diagram and the partially completed table to fill in the **three representations** for each vector:

- (i) algebraic variable (usually bold) $\mathbf{v}$, (ii) directed path $\overrightarrow{AB}$, (iii) column vector $\begin{pmatrix} x \\ y \end{pmatrix}$.

For the last columns, create examples of your own



	$\mathbf{u}$	$\mathbf{v}$			
Points	$A = (0,0)$ $B = (3,-1)$	$P(2,3)$ $Q = (\rule{1cm}{0.4pt})$	$\overline{C = (-3,2)}$ $\overline{D = (1,5)}$	$\overline{X = (5,0)}$ $\overline{ = (\rule{1cm}{0.4pt})}$	
Directed path	$\overrightarrow{AB}$	$\overrightarrow{\boxed{}}$	$\overrightarrow{\boxed{}}$	$\overrightarrow{\boxed{}}$	
Column vector	$\begin{pmatrix} 3 \\ -1 \end{pmatrix}$	$\begin{pmatrix} 5 \\ 3 \end{pmatrix}$	$\begin{pmatrix} \\ \end{pmatrix}$	$\begin{pmatrix} \\ \end{pmatrix}$	

Adding vectors

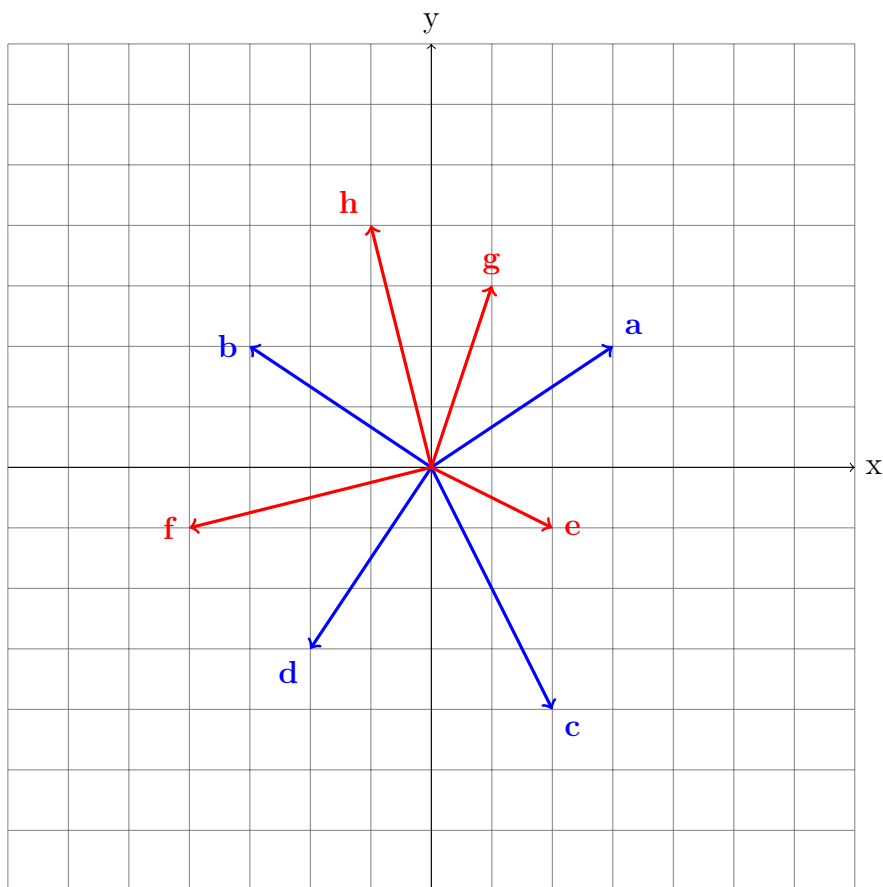
Use the vectors provided to find a route through the track, that crosses the finish line, you may not leave the grey track, but can touch the sides.

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Vectors:

$$\mathbf{a} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}, \quad \mathbf{b} = \begin{pmatrix} -3 \\ 2 \end{pmatrix}, \quad \mathbf{c} = \begin{pmatrix} 2 \\ -4 \end{pmatrix}, \quad \mathbf{d} = \begin{pmatrix} -2 \\ -3 \end{pmatrix},$$

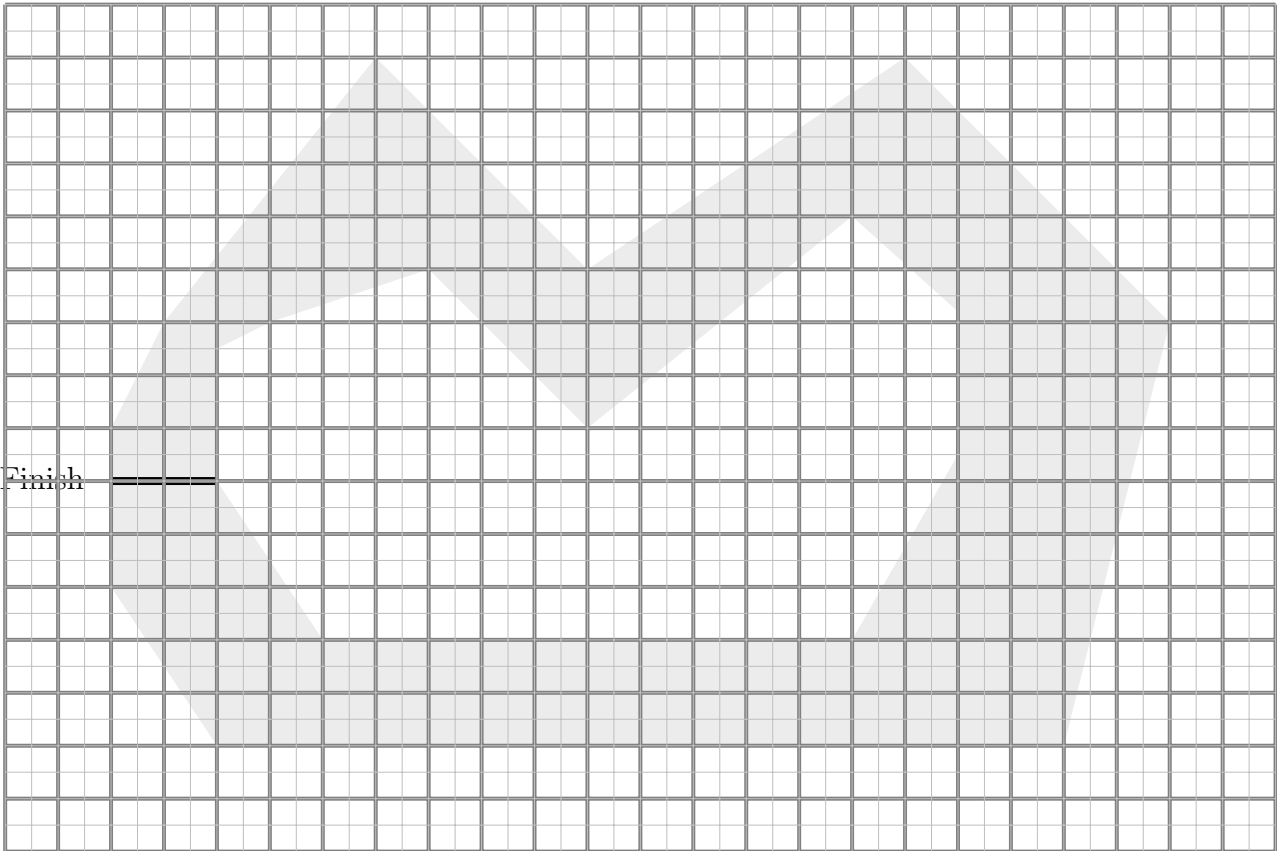
$$\mathbf{e} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}, \quad \mathbf{f} = \begin{pmatrix} -4 \\ -1 \end{pmatrix}, \quad \mathbf{g} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}, \quad \mathbf{h} = \begin{pmatrix} -1 \\ 4 \end{pmatrix}$$



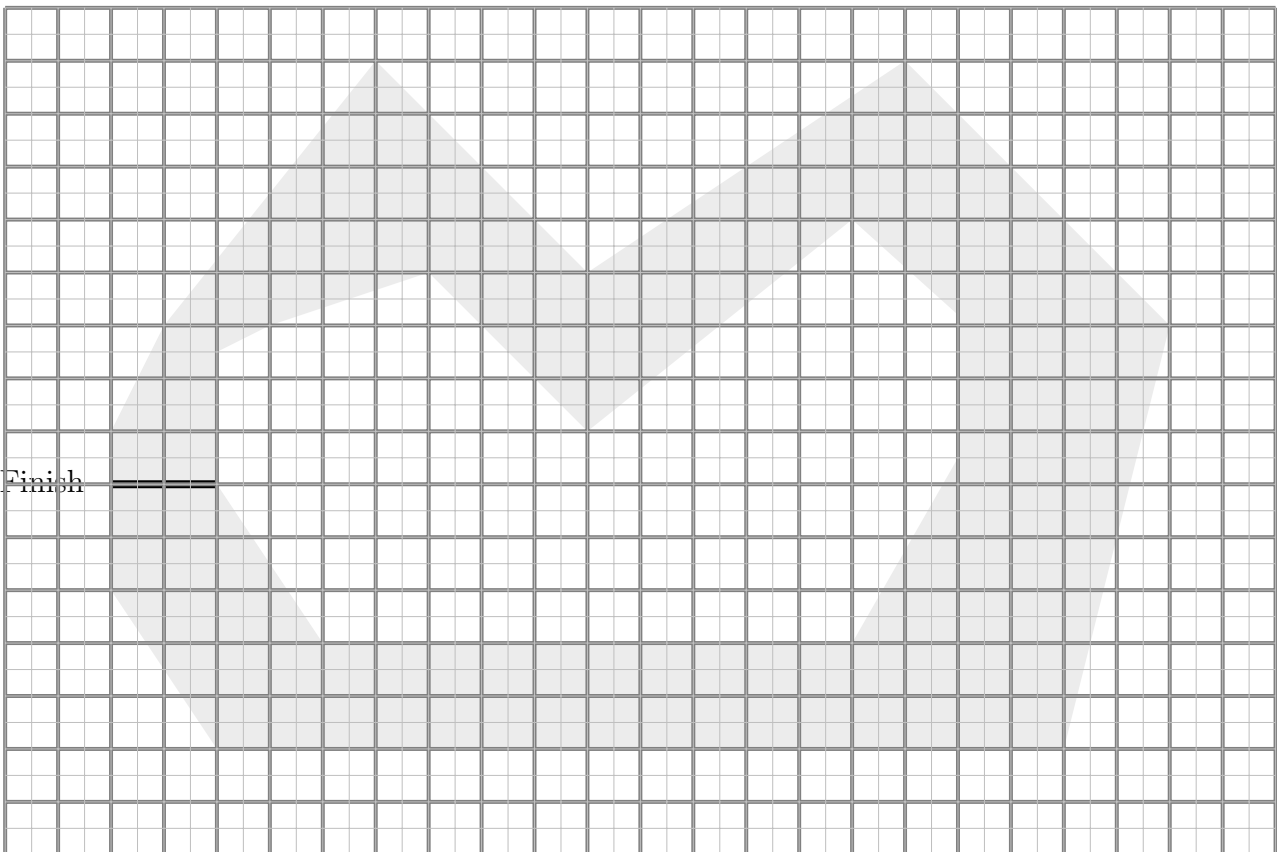
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1. Write your path in the following form: $g + a + \dots$
2. Collect the like terms in your expression
3. Thus evaluate the expression from 1. as a column vector, what do you notice?

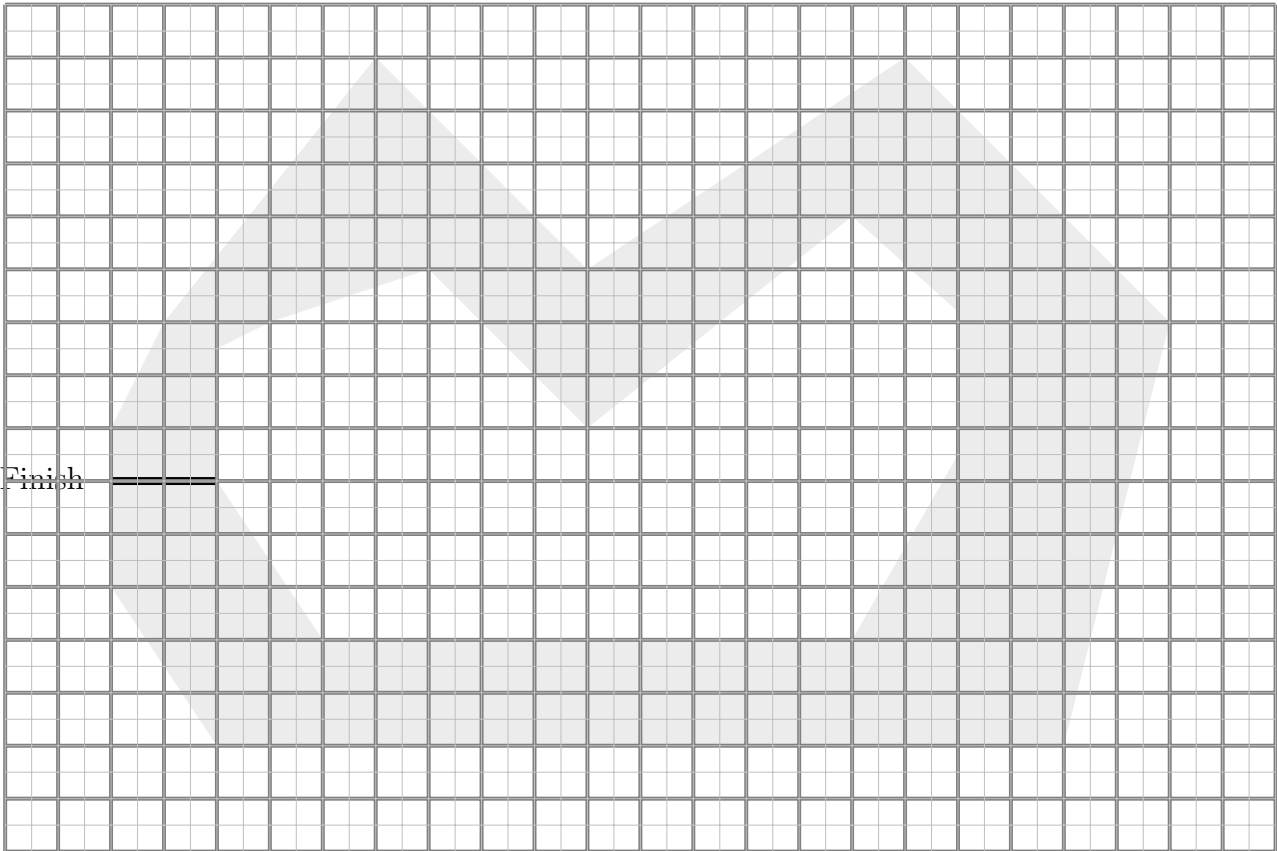
Start/Finish



Start/Finish



Start/Finish



Start/Finish

