

Vector Worksheet — Answer Key

Vector Representations

$$\mathbf{u} = \overrightarrow{AB} = \begin{pmatrix} 3 \\ -1 \end{pmatrix}, \quad \mathbf{v} = \overrightarrow{PQ} = \begin{pmatrix} 5 \\ 3 \end{pmatrix}, \quad \mathbf{w} = \overrightarrow{CD} = \begin{pmatrix} 4 \\ 3 \end{pmatrix}, \quad \mathbf{t} = \overrightarrow{XY} = \begin{pmatrix} 3 \\ 3 \end{pmatrix}.$$

The corresponding points are

$$A = (0, 0), \quad B = (3, -1), \quad P = (2, 3), \quad Q = (7, 6), \quad C = (-3, 2), \quad D = (1, 5), \quad X = (5, 0), \quad Y = (8, 3).$$

Adding Vectors

1. A valid path expression is $\boxed{\mathbf{g}}$.
2. Simplified, it is $\boxed{\mathbf{g}}$.
3. As a column vector,

$$\boxed{\mathbf{g} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}}.$$

The resultant is the total displacement from R to S , equal to the vector $\mathbf{g}$.