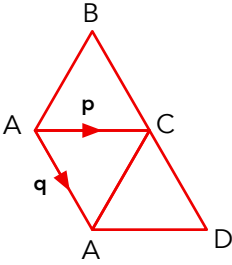
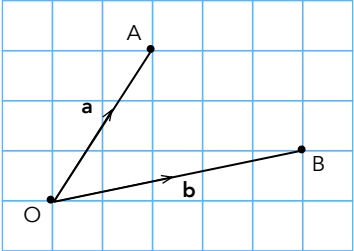
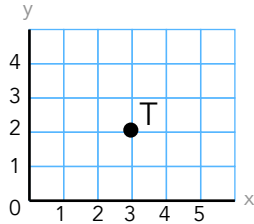


Vectors in 2 Dimensions Task following Pointon and Sangwin's taxonomy

| | | | |
|---|--|--|--|
| <p>Factual Recall</p> $\mathbf{v} = \begin{pmatrix} a \\ b \end{pmatrix}$ <p>What is the formula for \mathbf{v} ?</p> | <p>Carry out a routine, calculation or algorithm</p> <p>Evaluate $3\mathbf{a} + 2\mathbf{b} - 4\mathbf{c}$ where:</p> $\mathbf{a} = \begin{pmatrix} 3 \\ 7 \end{pmatrix}$ $\mathbf{c} = \begin{pmatrix} -4 \\ 1 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ 5 \end{pmatrix}$ | <p>Classify some mathematical object</p> <p>Which of these connect two points in this diagram?</p> <p>a) $\mathbf{p} + \mathbf{q}$ b) $2\mathbf{p}$ c) $-2\mathbf{q}$ d) $-\mathbf{p} - \mathbf{q}$ e) $-3\mathbf{q}$</p>  | <p>Interpret a situation or answer</p> <p>If this was a journey, what would be the bearing to the final destination?</p> $\begin{pmatrix} 1 \\ 0 \end{pmatrix} + \begin{pmatrix} 0 \\ 1 \end{pmatrix} + \begin{pmatrix} 1 \\ 0 \end{pmatrix} + \begin{pmatrix} 0 \\ 1 \end{pmatrix}$ |
| <p>Prove, show, justify</p> <p>Show that $\overrightarrow{AB} = \mathbf{b} - \mathbf{a}$</p>  | <p>Extend a concept</p> <p>What would be the magnitude of this vector?</p> $\mathbf{u} = \begin{pmatrix} 2 \\ 5 \\ 6 \end{pmatrix}$ | <p>Construct an instance</p> <p>Think of a pair of vectors that are perpendicular.</p> <p>... and now think of another pair!</p> | <p>Criticise a fallacy</p> <p>T marks the vector $\begin{pmatrix} 3 \\ 2 \end{pmatrix}$</p>  <p>Explain why this is not true and mark T correctly on the diagram.</p> |