3.1 Vectors

	At the end of this outcome I should...	I can do	Revised
3.1.1	know terms; vector, magnitude, direction, scalar, position vector, unit vector, directed line segment, component, scalar product	❑	❑
3.1.2	know addition properties and multiplication of a vector by a scalar	❑	❑
3.1.3	determine the distance between two points in 3-dimensions	❑	❑
3.1.4	know and apply: $\begin{pmatrix} a \\ b \\ c \end{pmatrix} = \begin{pmatrix} d \\ e \\ f \end{pmatrix} \Leftrightarrow a = d,\ b = e,\ c = f$	❑	❑
3.1.5	know and apply, for parallel vectors $\boldsymbol{v} = k\boldsymbol{u}$	❑	❑
3.1.6	know and apply the fact that if A, P & B are collinear such that $\frac{AP}{PB} = \frac{m}{n}$ then $\overrightarrow{AP} = \frac{m}{n}\overrightarrow{PB}$.	❑	❑
3.1.7	determine whether 3 points are collinear	❑	❑
3.1.8	know and apply the basis vectors $\boldsymbol{i}, \boldsymbol{j}, \boldsymbol{k}$	❑	❑
3.1.9	use the scalar product facts: $a.b = \lvert a \rvert \lvert b \rvert \cos\theta$ $a.b = a_1b_1 + a_2b_2 + a_3b_3$ $a.(b + c) = a.b + b.c$	❑	❑
3.1.10	determine whether two vectors are perpendicular	❑	❑
3.1.11	use scalar product to find angles between two directed line segments	❑	❑