$\begin{pmatrix} 2 \\ t \\ -4 \end{pmatrix}$ *is perpendicular to* $\begin{pmatrix} -1 \\ -3 \\ t-4 \end{pmatrix}$	$t=2$
$\begin{pmatrix} t \\ t+2 \\ 3 \end{pmatrix}$ *is perpendicular to* $\begin{pmatrix} -1 \\ 3 \\ 4-t \end{pmatrix}$	$t=18$
$\begin{pmatrix} t \\ 8 \\ 3t+1 \end{pmatrix}$ *is perpendicular to* $\begin{pmatrix} t+1 \\ t-1 \\ -2 \end{pmatrix}$	$t=2 \text{ or } -5$
$\begin{pmatrix} t \\ 4 \\ 2t+1 \end{pmatrix}$ *is perpendicular to* $\begin{pmatrix} t+2 \\ 1-t \\ -1 \end{pmatrix}$	$t=1 \text{ or } 3$
$\begin{pmatrix} t \\ 3 \\ t+3 \end{pmatrix}$ *is parallel to* $\begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$	$t=-9$
$\begin{pmatrix} 2t \\ -1 \\ -t \end{pmatrix}$ *makes an angle of* $60°$ *with* $\begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$	$t=5 \text{ or } 1/3$
$\begin{pmatrix} 2t \\ t^2 \\ 6-t \end{pmatrix}$ *is perpendicular to* $\begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$	$t=-2 \text{ or } 6$
Make up suitable perpendicular vectors	$t=2 \text{ or } 0$
Make up suitable parallel vectors	$t=-1 \text{ or } 2$