Vectors Exercises - Easier (1 page; 21/1/21)

(1) Vector equation of line

Given that the line $\underline{r} = \begin{pmatrix} 2 \\ 3 \end{pmatrix} + \lambda \begin{pmatrix} 1 \\ -2 \end{pmatrix}$ can also be written as

$\begin{pmatrix} 0 \\ 7 \end{pmatrix} + \mu \begin{pmatrix} -1 \\ 2 \end{pmatrix}$, find μ in terms of λ

(2) Vector equation of line

Find a vector equation of the line that passes through the point

(1,2) and is perpendicular to the line $\underline{r} = \begin{pmatrix} 3 \\ 4 \end{pmatrix} + \lambda \begin{pmatrix} 4 \\ -1 \end{pmatrix}$

(3) Lines & planes

Find the plane that passes through the point $(1, 2, 7)$ and is

perpendicular to $\underline{r} = \begin{pmatrix} 3 \\ 4 \\ 5 \end{pmatrix} + \lambda \begin{pmatrix} 4 \\ -1 \\ 2 \end{pmatrix}$

(4) Planes

Find the angle between the planes $x = 2$ and $y + 2z = 3$

(5) Lines & planes

Find the acute angle between the line $\frac{x-4}{-3} = \frac{y+2}{5}, z = -2$ and the

plane $2x - z = 7$.