

# QUIZ 4

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## 1 PROBLEM 1

1. Find the vector and the cartesian equations of the lines that passes through the origin and  $\begin{pmatrix} 5 \\ -2 \\ 3 \end{pmatrix}$ .

SOLUTION:

Vector equation of a line passing through two points with position **A** and **B** is,

$$r = \mathbf{A} + \lambda \mathbf{B} \quad (1.0.1)$$

$$\mathbf{A} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} \quad (1.0.2)$$

$$\mathbf{B} = \begin{pmatrix} 5 \\ -2 \\ 3 \end{pmatrix} \quad (1.0.3)$$

$$r = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} + \lambda \begin{pmatrix} 5 \\ -2 \\ 3 \end{pmatrix} \quad (1.0.4)$$

$$= \lambda \begin{pmatrix} 5 \\ -2 \\ 3 \end{pmatrix} \quad (1.0.5)$$