VECTOR ASSIGNMENT

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1 PROBLEM 1

1. Find the position vector of the mid point of the vector joining the points $\mathbf{P} = \begin{pmatrix} 2 \\ 3 \\ 4 \end{pmatrix} and \mathbf{Q} = \begin{pmatrix} 4 \\ 1 \\ -2 \end{pmatrix}$.

SOLUTION:

Let the midpoint of PQ be R

Position vector of **R** is given by:

$$\mathbf{R} = \frac{(\mathbf{P} + \mathbf{Q})}{2} \tag{1.0.1}$$

$$= \frac{1}{2}\begin{pmatrix} 2 \\ 3 \\ 4 \end{pmatrix} + \frac{1}{2}\begin{pmatrix} 4 \\ 1 \\ -2 \end{pmatrix} \tag{1.0.2}$$

$$= \begin{pmatrix} 3 \\ 2 \\ 1 \end{pmatrix} \tag{1.0.3}$$