

Marks are indicated in brackets after each question number

2014 Paper 1 Question 4, (2)

$$2\underline{u} - \underline{v} = 2 \begin{pmatrix} -2 \\ 3 \\ 5 \end{pmatrix} - \begin{pmatrix} 0 \\ -4 \\ 7 \end{pmatrix} = \begin{pmatrix} -4 \\ 6 \\ 10 \end{pmatrix} - \begin{pmatrix} 0 \\ -4 \\ 7 \end{pmatrix} = \begin{pmatrix} -4 \\ 10 \\ 3 \end{pmatrix}$$

2014 Paper 2 Question 2, (2)

$$B = (8, 4, 10), C = (4, 0, 10)$$

2015 Paper 2 Question 4, (2)

$$\begin{aligned} |\underline{u}| &= \sqrt{6^2 + (-13)^2 + 18^2} \\ &= \sqrt{529} \\ &= 23 \end{aligned}$$

2015 Paper 2 Question 5, (2)

$$\underline{p} = \begin{pmatrix} -5 \\ 3 \end{pmatrix}, \underline{q} = \begin{pmatrix} 4 \\ -5 \end{pmatrix}$$

$$\underline{p} + \underline{q} = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$$

2016 Paper 1 Question 1, (2)

$$\frac{1}{2}\underline{p} + \underline{q} = \frac{1}{2}\begin{pmatrix} 4 \\ -6 \end{pmatrix} + \begin{pmatrix} -5 \\ -1 \end{pmatrix} = \begin{pmatrix} 2 \\ -3 \end{pmatrix} + \begin{pmatrix} -5 \\ -1 \end{pmatrix} = \begin{pmatrix} -3 \\ -4 \end{pmatrix}$$

2016 Paper 2 Question 3, (1)

$$\vec{BD} = \underline{v} - \underline{u}$$

2017 Paper 2 Question 8, (1) (2)

a)  $\vec{PR} = -\underline{d} - \underline{c}$

b)  $\vec{TV} = \vec{TP} + \frac{1}{2}\vec{PR}$

$$= -\underline{d} + \frac{1}{2}(-\underline{d} - \underline{c})$$

$$= -\frac{3}{2}\underline{d} - \frac{1}{2}\underline{c}$$