4. The plane Π_1 contains the point $A(2, 4, -5)$ and is normal to the vector $\begin{pmatrix} -1 \\ 3 \\ 3 \end{pmatrix}$

The plane Π_2 contains the point $B(3, 6, -2)$ and is normal to the vector $\begin{pmatrix} 2 \\ 0 \\ -5 \end{pmatrix}$

The line l is the line of intersection of Π_1 and Π_2

(a) Determine a vector equation for l.

(7)

The points C and D both lie on l.

Given that C and D are 5 units apart,

(b) determine the exact volume of the tetrahedron $ABCD$.

(5)

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Question 4 continued

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Question 4 continued

(Total for Question 4 is 12 marks)