Calculators must **not** be used in this paper.

1 **(a)** Given that $\overrightarrow{PQ} = \begin{pmatrix} -3 \\ 7 \end{pmatrix}$ and $4\overrightarrow{PR} = \begin{pmatrix} -2 \\ 8 \end{pmatrix}$, find $\overrightarrow{RQ}$. [2]

(b) The vectors **a**, **b** and **c** are such that $\mathbf{a} = \alpha\mathbf{i} + 6\mathbf{j}$, $\mathbf{b} = 4\mathbf{i} + \beta\mathbf{j}$ and $\mathbf{c} = (2\alpha + 5\beta)\mathbf{i} + 20\mathbf{j}$, where α and β are scalars.

Given that $\mathbf{c} = 3\mathbf{a} - 2\mathbf{b}$, find the values of α and β. [3]

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2 Solve the inequality $(3-x)(5x+8) \geqslant 9-3x$. [4]

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