

3 (a) Express $3\sqrt{2}\sin(x+45^\circ) + \cos x$ in the form $R\cos(x-\alpha)$, where $R > 0$ and $0^\circ < \alpha < 90^\circ$. [4]

[illegible]

(b) Hence solve the equation $3\sqrt{2}\sin(3\theta+45^\circ)+\cos 3\theta=-4$ for $0^\circ < \theta < 180^\circ$. [4]

Blank lined paper for writing.

- 7 (a) Express $5 \sin\left(x + \frac{1}{6}\pi\right) - 4 \cos x$ in the form $R \sin(x - \alpha)$, where $R > 0$ and $0 < \alpha < \frac{1}{2}\pi$. State the exact value of R and give the value of α correct to 3 decimal places. [4]

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

4

[6]

Handwriting practice sheet with 20 rows of dotted lines for tracing and writing.

[4]

7