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(i) Show that the equation

$$\frac{\cos \theta - 4}{\sin \theta} - \frac{4 \sin \theta}{5 \cos \theta - 2} = 0$$

may be expressed as  $9 \cos^2 \theta - 22 \cos \theta + 4 = 0$ .

[3]

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.

(ii) Hence solve the equation

$$\frac{\cos \theta - 4}{\sin \theta} - \frac{4 \sin \theta}{5 \cos \theta - 2} = 0$$

for  $0^\circ \leq \theta \leq 360^\circ$ .

[3]

[illegible]