

**4 (a)** Show that the equation

$$3 \tan^2 x - 3 \sin^2 x - 4 = 0$$

may be expressed in the form  $a \cos^4 x + b \cos^2 x + c = 0$ , where  $a$ ,  $b$  and  $c$  are constants to be found. [3]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins or other markings on the paper.

(b) Hence solve the equation  $3 \tan^2 x - 3 \sin^2 x - 4 = 0$  for  $0^\circ \leq x \leq 180^\circ$ . [4]

[illegible]