

The function f is given by $f(x) = 4 \cos^4 x + \cos^2 x - k$ for $0 \leq x \leq 2\pi$, where k is a constant.

- (a) Given that $k = 3$, find the exact solutions of the equation $f(x) = 0$. [5]

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

