

4 The function f is such that $f(x) = a + b \cos x$ for $0 \leq x \leq 2\pi$. It is given that $f(\frac{1}{3}\pi) = 5$ and $f(\pi) = 11$.

(i) Find the values of the constants a and b . [3]

This image shows a full page of white paper with ten horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.

(ii) Find the set of values of k for which the equation $f(x) = k$ has no solution. [3]

[illegible]