Calculators must **not** be used in this paper.

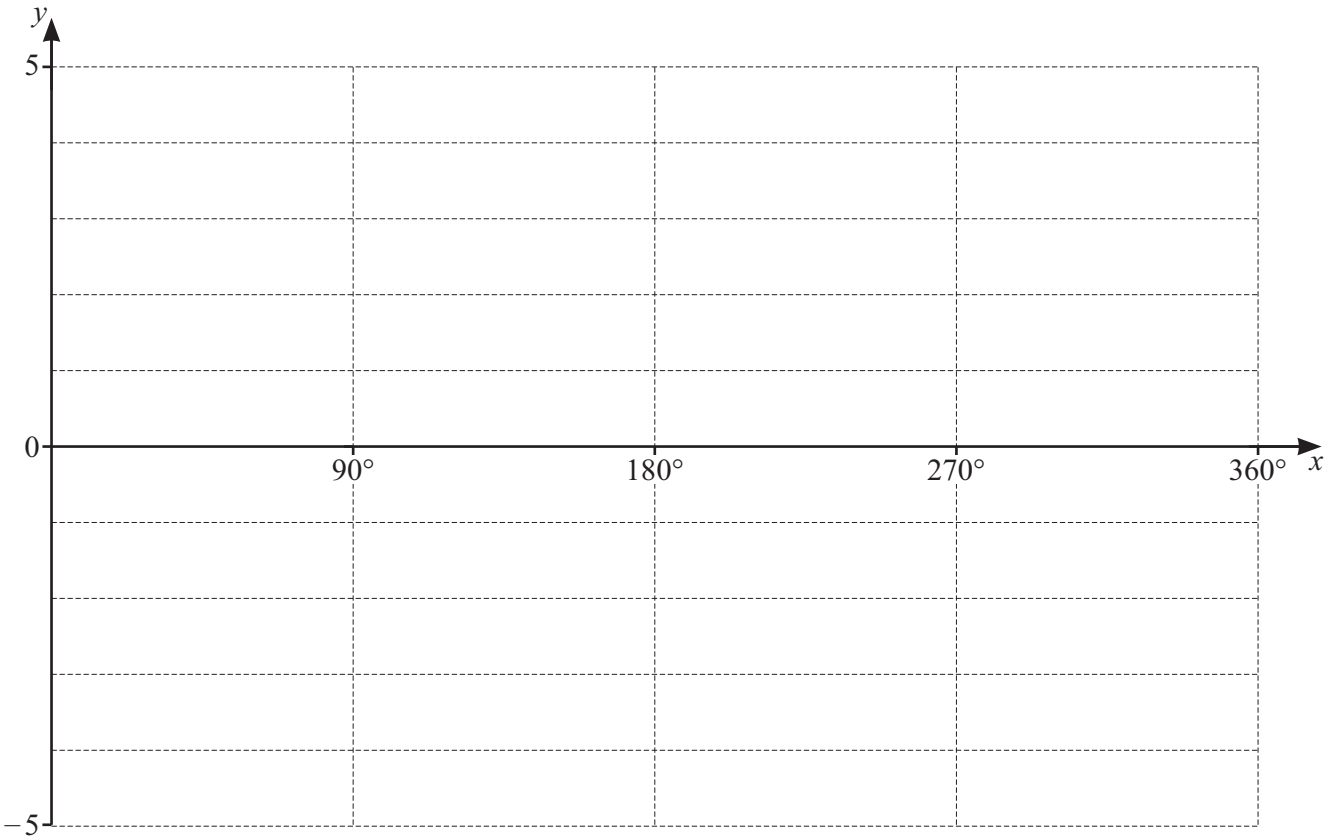
1 **(a)** Write down the amplitude and period of $3\cos 2x - 1$.

Amplitude = ...

Period = ...

[2]

(b) Sketch the graph of $y = 3\cos 2x - 1$ for $0° \leqslant x \leqslant 360°$. [3]



DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

2 Find the set of values of k for which the line $y = kx - 3$ meets the curve $y = x^2 + 2x$ at two distinct points.
Give your answer in simplest surd form. [6]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN