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(i) Find the set of values of k for which the whole of the curve lies above the x -axis. [2]

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

(ii) Find the value of k for which the line $y + 2x = 7$ is a tangent to the curve. [3]

[illegible]