

- A curve has a stationary point at $(3, 9\frac{1}{2})$ and has an equation for which $\frac{dy}{dx} = ax^2 + a^2x$, where a is a non-zero constant.

(i) Find the value of a .

[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 run across the entire width of the page. There is no text or other markings on the paper.

(ii) Find the equation of the curve.

[4]

[illegible]

[illegible]

(iii) Determine, showing all necessary working, the nature of the stationary point.

[2]

[illegible]