

A-Level Mathematics: 9709 Mathematics November 2025 Question Paper 41

- 2

- (a)

This image shows a blank sheet of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting or typing. There are no margins, text, or other markings on the page.

It is given that λ J of kinetic energy, where $\lambda > 0$, is lost during the collision.

- (b)

[illegible]

- 6

[6]

This image shows a full page of a handwriting practice worksheet. It consists of multiple rows of horizontal dashed lines spaced evenly down the page, providing a guide for letter height and placement. The background is plain white, and there are no other markings or text present.

4

(a)

[4]

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

When P and Q collide, they coalesce.

(b) Find the speed of the combined particle at the instant that it reaches the ground. [5]

Handwriting practice sheet with 20 rows of dotted lines for tracing and writing.

- 5

(a)

[3]

[illegible]

P is now projected on a smooth horizontal surface with speed $v \text{ ms}^{-1}$ directly towards a particle Q of mass 1.25 kg which is stationary. After P and Q collide, the velocity of P is $w \text{ ms}^{-1}$ and the velocity of Q is $2w \text{ ms}^{-1}$. The loss of kinetic energy in the collision is 25 J .

(b)

[4]

[illegible]