2024 Ph H1 Q4

Section: Our Dynamic Universe
Topic: Motion, Equations and Graphs

Question Summary

A ball is thrown horizontally off a cliff.
With air resistance, which v–t graphs represent the **horizontal** and **vertical** velocity components?

✅ Final Answer:

A. graph X (horizontal), graph Y (vertical)

Working

- **Horizontal velocity:** decreases over time due to air resistance → matches **graph X**.
- **Vertical velocity:** increases then levels off due to air resistance → matches **graph Y**.

Quick Tips

- With air resistance, horizontal speed falls.
- Vertical speed approaches a terminal velocity.
