2019 Ph H1 Q2

Section: Our Dynamic Universe

Topic: Motion – Components of Velocity

Question Summary

A stone is thrown at **15 m s⁻¹** at **50°** to the horizontal. Which row in the table shows the **horizontal** and **vertical** components of velocity?

✅ Final Answer:

B. $15 \cos 50, \ 15 \sin 50$

Working

- Horizontal component: $u_h = u \cos \theta = 15 \cos 50$.

- Vertical component: $u_v = u \sin \theta = 15 \sin 50$.

- Answer B matches this pattern.

Quick Tips

- Use **cosine** for horizontal, **sine** for vertical (adjacent/opposite).

- Always resolve the velocity into perpendicular components.